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USERS' MERGER DOUBTS REMAIN

Expect some turmoil in HP/Compaq union

BY JAIKUMAR VIJAYAN

Shareholders apparently approved the $21 billion merger of Hewlett-Packard Co. and Compaq Computer Corp., but the sheer scope of the integration ahead still worries users.

IT managers say the prospect of product cutbacks, sweeping layoffs and potential service disruptions that could result from the merger are troubling, despite assurances from both companies.

"The obvious challenge will be the cultural one — and it's not just between the two com-

HP'S CARLY FIORINA is proceeding as if the merger is a done deal.

panies this time," said Thomas Murphy, CIO at Miami-based Royal Caribbean Cruises Ltd., which uses both HP and Compaq equipment.

"I think there is a fundamental split within HP in terms of the value and need for the deal which could prove over time to be more of an issue than the combination of the two companies," he said.

But the promised benefit of a much broader product and services portfolio, as well as the cost efficiencies of merging the two organizations, may

HP/Compaq, page 69

DOD MAY BAN FOREIGN IT WORKERS

Industry fears impact of 'xenophobic' policy

BY DAN VERTON

In a post-Sept. 11 initiative to boost security, the U.S. Department of Defense is quietly considering a proposal to ban foreign IT workers from taking part in unclassified but sensitive IT projects throughout the military.

The draft policy, which the Pentagon hasn't yet released, could be approved in 60 to 90 days, according to DOD sources.

Harris Miller, president of the Arlington, Va.-based Information Technology Association of America, a trade association representing more than 500 companies, sent a letter on March 18 to the Pentagon's

DOD Policy, page 14

NEW FLAP OVER ORACLE DATABASE PRICING

Users, analysts at odds with vendor over interpretation of named user contracts

BY MARC L. SONGINI

Oracle Corp. last week found itself embroiled in a new database licensing controversy, prompted by recent audits that resulted in the software vendor telling some companies to pony up more money.

Some users and analysts accused Oracle of playing hardball with those customers in order to force them to buy more named user licenses or convert to costlier processor-based software licenses. At issue are claims that

Oracle changed the way it interprets a clause in its named user contracts.

Oracle defended itself, saying the complaints stemmed from "a handful of misunderstandings" about how the named user approach works.

Jacqueline Woods, vice president of global practices at Oracle, also said the audits aren't anything new. The company regularly performs about 400 per year, half by request and half randomly, to ensure that users are com-

plying with license requirements, she said.

In an attempt to defuse the issue, Oracle will grandfather the licenses of any users who misunderstood its pricing,

Oracle, page 14

AT A GLANCE

Points of Contention

USERS AND ANALYSTS: Oracle is reinterpreting a clause related to multiplexing software in its named user database licenses and telling some customers that they need to buy more expensive licenses.

ORACLE: The complaints are a result of misunderstandings about the terms of its named user licensing policy, which has remained consistent "for several years."

UNCLE SAM'S BRAIN DRAIN

The government is facing a mass exodus of IT workers, given that federal employees are eligible to retire at age 55 and 29% of all government IT workers are over the age of 50. While some IT managers, like the Defense Department's Joyce France (above), are trying to recruit and retain top staffers by beefing up their bonuses, many officials acknowledge that their efforts might be too little, too late. **Story starts on page 36.**

It has been clear for some time now that the future will be a world in which everything is connected to everything, seamlessly, automatically, and securely, via XML Web services. What has not been clear is how that future will be built. Introducing Microsoft® Visual Studio® .NET, the first toolset built from the ground up for XML Web services development. Just one keyword—WebMethod—turns your existing application into a Web service, and with new Web Forms you can create Internet applications using the same "drag-and-drop, double-click to write code", technique made famous by

Visual Studio .net

WHEN YOUR EMPLOYEES CAN'T ACCESS INFORMATION
IT'S NOT JUST TIME THEY'RE LOSIN

BALANCING SOFTWARE SELECTION

The age-old debate over whether to go with best-of-breed vs. all-in-one products has taken a new turn as enterprise vendors close the gap on functionality. **PAGE 28**

WIRELESS LANs GET ROLLING

Despite security concerns, IT managers are deploying 802.11b-based networks. *Computerworld* explains how they're doing it. **PAGE 46**

COMPUTERWORLDTHIS WEEK

ONLINE

TAILLESS MICE TALES

The Gadget Guys are back with a review of Logitech's Cordless MouseMan Optical and Microsoft's Wireless IntelliMouse Explorer.
www.computerworld.com/wireless

TALK OF THE WORKPLACE

A discussion forum that was launched after a recent story involving mainframe skills and pay levels has evolved into a virtual roundtable on hiring practices. Check out the latest posts.
www.computerworld.com/q/7x3670

PETRELEY HOLDS COURT ONLINE

Computerworld columnist Nicholas Petreley answers community members' questions — and adds a few thoughts of his own — on .Net, Java and X terminals, among other topics. One question: "Why do fans of .Net have blinders on when it comes to the 'net' portion?"
www.computerworld.com/q/7x3700

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www.computerworld.com/q/7x3430

AT DEADLINE

AOL Time Warner Drops E-Mail Plan

New York–based AOL Time Warner Inc. reversed a decision made last year that required all also of its divisions to use e-mail software based on technology developed by its Netscape Communications Corp. unit. A company spokeswoman said the business operations are now free to go their own ways on e-mail. Some divisions had complained that Netscape's software didn't fully meet their needs, she said.

Postal Service to End Wireless Service

Citing a lack of customer interest, the U.S. Postal Service said it plans to stop offering wireless access to its package-tracking and delivery-confirmation system as well as other informational services. The wireless capabilities, which will be dropped next month, were launched last year for users of handheld devices and Web-enabled phones.

Palm Has Profit Despite Sales Drop

Handheld computer maker Palm Inc. said it returned to profitability in its third quarter ended March 1, despite a sharp drop in sales compared with the same period a year ago. Santa Clara, Calif.-based Palm reported net income of $2.0 million for the quarter, its first profit after four straight losses. But revenue fell 38% year to year, dropping from $470.6 million to $292.7 million.

Short Takes

Michael Crawley, who previously was CIO at CAMPBELL SOUP CO. in Camden, N.J., was named to a similar position at networking equipment vendor AVAYA INC. in Basking Ridge, N.J. . . . IBM and the U.S. Department of ENERGY said they plan to connect an IBM supercomputer to a national computing grid for scientists by year's end.

E-Mail Salvos Fired In Microsoft Case

Both sides to introduce internal e-mail, documents into remedy phase of hearings

BY PATRICK THIBODEAU
WASHINGTON

The remedy phase of the Microsoft Corp. antitrust trial began last week with both sides planning to rely heavily on internal e-mails and reports to tar and feather their opponents. But sometimes bad e-mails say good things about companies.

Take the "internal use only — do not distribute" Sun Microsystems Inc. memo that Microsoft used last week to attack its competition.

Sun executives met in August last year with IT officials at three end-user firms trying to decide between Sun's Web services offering, the Sun Open Net Environment, and Microsoft's .Net. The news from the end users wasn't good.

"All three customers expressed a lack of faith in Sun's ability to perform, especially in areas where we are directly competitive to Microsoft," Sun officials wrote in the document that was introduced as evidence. In another part of the memo, the Sun executives wrote that the customers noted "a disconnection between [Sun CEO] Scott McNealy's vision of computing and Sun's actions — everyone believes the PC is here to stay."

Ouch.

While allowing that such revelations are embarrassing, David Smith, an analyst at Stamford, Conn.-based Gartner Inc., said, "I suspect that you could find those kinds of memos from any company."

Indeed, over the next two months, both sides plan to introduce hundreds of e-mails, memos and other documents likely to include revelations about the internal workings of some of high tech's largest firms. These frank e-mails could give IT executives rare

insight into vendors' cultures.

Sun's report of its client meeting, which included Merrill Lynch & Co., Thomson Legal Publishing and Reuters Group PLC, "fits their culture," said Mike Meyers, vice president of IT at Genesee & Wyoming Inc., a Greenwich, Conn.-based rail freight transportation provider.

Sun is "a very academic culture. A lot of their model tends to be, 'Say what you feel, get in your face, get it out,'" said Meyers. "I think that would be a lot better than trying to

sugarcoat their feelings."

Jon C. Dell'Antonia, information systems director at clothing maker OshKosh B'Gosh Inc. in Osh Kosh, Wis., said he would expect his employees to be as frank in their memos.

"To me, [the Sun memo] doesn't say anything negative about Sun at all. It says that they feel comfortable in talking among one another," said Dell'Antonia. "Wouldn't you hope companies would be concerned about what their customers thought about them?"

Don't Blame Microsoft

Microsoft introduced the document in U.S. District Court as part of its defense against the tougher remedies sought by the nine states that have refused to sign a Bush administration settlement. The software giant was trying to show that competitors' missteps are to blame for any marketplace problems they may face — not Microsoft.

But Microsoft will also be on the receiving end in this courtroom battle.

The states intend to introduce a series of documents detailing discussions Microsoft had with Dell Computer Corp. with the goal of giving Dell a hard time about selling Linux desktops. Dell last year pulled its desktop Linux line.

Then there's the e-mail from America Online Inc. CEO Barry Schuler to RealNetworks Inc. that said, "[Microsoft wants] to kill you guys so badly." ➤

AT A GLANCE

What's Going On?

The Microsoft antitrust trial remedy phase began last week.

WHAT TO EXPECT: Hundreds of new e-mail and reports about Microsoft and its competitors.

WHAT COULD HAPPEN: Judge Colleen Kollar-Kotelly is tough. She isn't letting the states stray into new areas and could narrow this case to include topics such as handheld devices. It's too early to predict an outcome.

BILL GATES TO TESTIFY: In opening arguments, Microsoft officials said they expect the company's chairman to take the witness stand.

Corrections

A story in our March 11 issue, "Virus Alerts Lack Standards," and a follow-up column in our March 18 issue, "Virus Alerts Run Amok," incorrectly characterized an open letter that was sent by Kenneth Bechtel to antivirus software vendors. The letter was sent on behalf of members of the Anti-Virus Information Exchange Network. In addition, the company Bechtel works for was misidentified. He is a consultant at Team Anti-Virus in Palmyra, Pa.

A story in our March 18 issue, "Brokerage Launches Search Engine to Aid Call Center," stated that Emeryville, Calif.-based Ask Jeeves Inc. sells Version 5.0 of its Answer software. That product has been replaced by its JeevesOne release.

Trial Judge: Keep Evidence Focused

WASHINGTON
When James Barksdale, the former CEO of Netscape Communications Corp., testified last week about old wounds in the so-called browser wars with Microsoft, it was supposed to be powerful testimony for the states in their push for tougher remedies against the software giant. Instead, U.S. District Court Judge Colleen Kollar-Kotelly treated Barksdale's testimony like a tired TV rerun.

Her impatience was visible. At one point, when the states' attor-

ney, Brendan Sullivan, defended her line of questions, Kollar-Kotelly waved her hand and sharply told him to "just move on."

In what may be a sign of trouble for the states, Kollar-Kotelly repeatedly warned their lawyers against wasting the court's time by revisiting testimony raised in the initial trial or making new accusations or charges against Microsoft. She also excluded some evidence as hearsay.

Kollar-Kotelly is intent on keeping the scope of the trial focused on specific anticompetitive actions by

Microsoft cited by the U.S. Court of Appeals last June. "The judge is taking a much closer and more skeptical look at the states' evidence," said Hillard Sterling, an antitrust expert at Gordon & Glickson LLC, a law firm in Chicago.

But legal experts say that may not indicate bias in favor of Microsoft. Rather, they said, Kollar-Kotelly is just being cautious. Robert Lande, an antitrust professor at the University of Baltimore School of Law, said, "The judge wants to be very careful that she creates a record that will not be reversed on appeal."

— Patrick Thibodeau

Enterprise IM Lags Behind Expectations

Users say technology still lacks security,
archiving; optimism about uptake persists

BY JENNIFER DiSABATINO

Instant messaging (IM) has shed its image as a toy for teenagers and gained credence as a bona fide business tool. But IM hasn't become as important to companies as some people predicted it would more than a year ago.

"It's growing up," said Jeff Bundy, CIO at YMCA of the U.S.A. in Washington. "I think it's just important to remember that it's just one of the tools in the tool kit. Just like the telephone — it is a curse and a blessing."

In a survey of 160 companies conducted March 12 to 18 by Osterman Research Inc. in Black Diamond, Wash., almost 30% of respondents said they officially use IM, and another 42% said they will likely use it in the future. That figure is significantly lower than what Framingham, Mass.-based IDC projected about 18 months ago. In the fall of 2000, the market research firm estimated that 70% of corporations, would have installed IM software by now. In a survey of 72 corporations with more than 1,000 employees that IDC conducted at that time, only 6.9% of companies said they had installed such software.

IDC won't publish its latest statistics on IM usage until the end of next month, but best bit it said there were 18.5 million enterprise IM users in the U.S. And optimism for use of the technology in business continues. Gartner Inc. in Stamford, Conn., said that more than 70% of all U.S. companies will use IM by next year.

Some vertical industries in particular benefit from the use of IM, said David Ferris, president of Ferris Research Inc. in San Francisco. He cited financial services, the military, education and legal services as key beneficiaries.

Some users agreed that IM is

becoming an everyday business tool. Bob Palmer, vice president of IT at Lenox Inc. in Lawrenceville, N.J., said he uses IM daily to communicate with his staff and better stay on top of IT projects.

At the YMCA, IM will be a critical tool for speeding up help desk response time and ending "the ping-pong matches with voice mail and telephone," Bundy said.

Bundy's 30-person staff supports the IT operations at approximately 500 of the YMCA's 2,434 branches. Currently, he's running a pilot deployment of an IM and collaboration tool from Groove Networks Inc. in Beverly, Mass., to improve IT help desk functions.

Despite notable success, IM continues to face hurdles. Some users are hesitant about rolling out IM for security reasons and because of the lack of archiving tools, Ferris said.

There are few products that archive instant messages, he noted, and the use of IM outside a corporate intranet can leave ports on the firewall open while the IM software seeks IP addresses.

One company, InGate Systems in Stockholm, has a new firewall appliance that lets Session Initiation Protocol-enabled messages securely move through without exposing the entire network. The Session Initiation Protocol is a protocol for initiating communications such as instant messaging and Internet conferencing.

Last week, Groove announced that it has a connector that can store IM session information in the document management software of Documentum Inc. in Pleasanton, Calif.

1	Corporate need for encryption
2	Companies adopting IM systems
3	Integration with existing directories
4	Message archiving (very few currently offer this)

INS Looks to IT to Revamp Lax Student Visa System

Will go from paper
to Web database

BY DAN VERTON

The U.S. Immigration and Naturalization Service (INS) is embarking upon a series of management and IT reforms designed to ensure that terrorists are unable to gain entry to the U.S. under false pretenses, INS Commissioner James Ziglar told a House subcommittee last week.

The issue of authorizing and monitoring foreign student visa recipients came to the forefront with the events of Sept. 11 and again this month when student visa approval letters were issued for two of the 19 hijackers who took part in the attacks. In response, the INS has sped up plans to revamp its IT infrastructure, including creating the agency's first CIO position and moving from a paper-based student visa system to an automated, real-time Web-based database.

"When I started this job about seven months ago . . . I found too much reliance on manual data entry, much of

which had to be keyed and shipped to outside contractors," said Ziglar in written testimony submitted to Congress. "The student process had become so lax and lengthy because the focus of immigration policies prior to Sept. 11 was not on security but on facilitating the students and the schools that they attended. The focus has changed, and our process has changed as well."

That new process will take off in July, when the INS will complete testing on a pilot project that will form the basis for a nationwide system capable of tracking foreign visitors and student visa holders. Known as the Student and Exchange Visitor Information System (SEVIS), the system will use XML technology to link thousands of U.S. universities, educational institutions, port authorities and U.S. State Department consulates around the world to a centralized database at INS headquarters in Washington, said INS spokeswoman Eyleen Schmidt.

Congressional passage of the U.S. Patriot Act last October provided the INS with $33 million to deploy SEVIS, which has been in beta testing at dozens of schools in Atlanta, Boston and North Carolina,

and Schmidt. In addition, the law now requires the INS to have the system fully operational by next year.

The centerpiece of SEVIS will be a centralized, Web-enabled database that will be able to track bar-coded I-20 forms — the forms issued to foreign students by schools to prove their enrollment. The new digital process will "link documents on individual students and cut down on fraud," said Schmidt. Schools will be able to enter I-20 forms into the system individually or in batch mode.

However, some schools say the data integration challenge could be daunting and costly for them.

"Our database is fairly antiquated, and the data cannot be captured in the current database," said Cynthia Tezaki, assistant director of international programs at George Mason University in Fairfax, Va.

"It's going to cost us a lot of money," Tezaki said, acknowledging that the new system will almost certainly improve the process of verifying foreign student enrollments, which in the past could take up to nine months.

An industry source working with the INS on various IT projects said connecting all of the databases in the next two years will be a "very big challenge," but not impossible.

— *Dan Verton*

How SEVIS Would Work

SEVIS is designed to provide a step-by-step method of monitoring foreign student visas:

1. Foreign student enrolls in a U.S. university, which generates an I-20 form in the database. Universities can do this for individuals or in batch mode.

2. Student takes bar-coded I-20 form and passport to a State Department consular office to get a visa.

3. Overseas State Department consular office checks student against terrorist watch lists and

enters the date and type of visa granted in the database.

4. Upon student's arrival in the U.S., the date, port of entry and current U.S. address are added to student records in SEVIS.

5. University updates its database to confirm student enrollment and any change of status.

6. System alerts and event notifications, such as criminal convictions, are automatically generated and sent to INS field offices.

Novell to Bolster App Management Support

J2EE, Web services, XML support to be added to networking software

BY MICHAEL MEEHAN
SALT LAKE CITY

USERS WHO are grappling with unwieldy application infrastructures came to Novell Inc.'s BrainShare 2002 conference here last week looking for some pain management help. And Novell promised to deliver it by making its networking software capable of handling more complex application management tasks.

Chris Stone, a former Novell executive who returned last month to run most of the company's operations, said that during the next 12 months, Novell will add Java 2 Enterprise Edition (J2EE) functionality, Web services tool kits and XML-based application programming interfaces to its various products.

"I think [Novell] knows they have to go there to keep pace," said Sherra Pierre, vice president of information systems at New York-based Sesame Workshop Inc. Pierre added that the producer of children's programming plans to pursue a Java and Web development environment strategy.

Like several other attendees, Pierre said Sesame Workshop is relying on Novell's technology to set up an IT backbone that better coordinates its directory services and application databases. For example, the organization is using Novell's NetWare and eDirectory tools to create a single sign-on capability for internal users of its Web-based applications.

The project was scheduled to go live late last week, and Pierre said she hopes it will free her staff from the task of managing disparate directories containing user names, passwords and access privileges.

"It's a nightmare to manage passwords," she said. "You've got 15 different applications with separate passwords and separate security to keep track of. That's a full-time job."

Stone said he envisions turning Novell's sprawling product line into "a distributed application environment sitting in the network." As part of the plan, he added, Novell will do away with the proprietary programming interfaces in its software.

Changing Direction

"They're coming dangerously close to being what people call an application server," said John Enck, an analyst at Gartner Inc. in Stamford, Conn. He added that Novell's flagship NetWare software could evolve into more of an application development and management suite under Stone's plan.

"I'd like to see them head

down that path," said David Hasselbach, a senior systems programmer at the University of Michigan Medical Center in Ann Arbor. "Ideally, you want to leverage some of the technology you've already got in-house, and we're a longtime Novell user."

Tommy Spangler, director of IT at Boise, Idaho-based Idacorp Inc.'s energy trading unit, said that her operation installed eDirectory last year to help

mesh other online trading applications and back-end systems.

"The key is to get the data centralized and your security in place," Spangler said. "After that, you can start to play with the applications."

She noted that Idacorp Energy plans to use Novell's tools to distribute software upgrades to end users and to authenticate users on multiple devices in order to increase their mobility. ◉

Stone: Novell Will Beat Microsoft at Its Own Game

Exec vows firm will 'stop whining,' be more aggressive

BY MICHAEL MEEHAN
AND DON TENNANT
SALT LAKE CITY

Chris Stone last month returned to Novell Inc. as vice chairman in the office of the CEO after having left the company in 1999. Stone, who is overseeing operations such as engineering, marketing and consulting, spoke with *Computerworld* at last week's Brain-Share user conference about changes he plans to make at Novell.

Did Novell miss the boat with Java? Yes, absolutely. We blew it.

What do you attribute that to? We couldn't let go — couldn't latch onto [other Viable Loadable Modules], couldn't let go of [NetWare Core Protocol]. There are a million of these proprietary interfaces to Novell products.

You've got some good technology. Do you think that makes Novell a prime acquisition target? No. As a management team here, we're just not interested in that. We're interested in making the company succeed on its own merits.

Do you feel like you have the technology and resources to have that you need? No, we do not.

Do you have to look for acquisitions to get it? Yes. We've been talking a lot about Web services. What's the missing component there? An authoring tool. In the Web services area, you've got to have an app server [and] you've got to have a complete authoring and development environment. There's an interesting space for us to look at. ◉

STONE: Novell "blew it" rejecting Java.

Users to Novell: Go Forth and Market

SALT LAKE CITY

More flash and less substance is rarely found on the wish lists of IT managers, but numerous Novell users made it clear at BrainShare 2002 here that they want the vendor to start selling, and selling hard.

"They make great stuff, but no one seems to know about it," said David Hasselbach, a senior systems programmer at the University of Michigan Medical Center.

Users want to invest in technology that has a long-term future, Hasselbach said, adding that Novell needs to step up its presence in the software market.

Sean Welch, director of core engineering at Mount Sinai Hospital in New York, said he also wants to see Novell do a better job of going out and asking converts to its applications.

Welch noted that he has a cluster of NetWare 5.0 servers that haven't had to be rebooted in six years. "It's not like I blend Novell red, but this stuff works," he said.

During his keynote speech and in subsequent interviews, Novell Vice Chairman Chris Stone promised that the company would

be more aggressive about battling Microsoft Corp. through deals with corporate users (see interview at right).

At one point in the speech, Stone selected four users from the audience and asked them what they most wanted from Novell. All four asked for the same thing: better marketing.

But Novell customers have heard tough talk about marketing before. Donald Barber, a technical support specialist at Dallas Area Rapid Transit in Texas, pointed out that a similar message was delivered at last year's BrainShare conference, to no great avail.

— Michael Meehan

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FedEx Expands Net Reach to Mobile Data

Augments private network to support high-bandwidth apps

BY BOB BREWIN
ORLANDO

FedEx only has signed a five-year deal to use the AT&T Wireless Services Inc.'s next-generation mobile data network to support new, high-bandwidth applications to be used by its 40,000 couriers. Analysts said the move demonstrates that commercial mobile data services are becoming a reality for enterprise users.

FedEx also disclosed that it has selected Microsoft Corp.'s Pocket PC operating system as the technology for its next-generation mobile scanner and package-tracking device, which will be called PowerPad.

Ken Pasley, FedEx's director of wireless systems development, said the AT&T Wireless General Packet Radio Service (GPRS) network "gives us significantly more bandwidth" than the company's private network and will allow FedEx to expand the types of applications used on tracking devices. The throughput of the GPRS network is about 20K to 40K

bit/sec., compared with the 19.2K bit/sec. that FedEx currently gets on its nationwide private network. The new network will allow couriers to send fat files such as digital signatures and could also support voice recognition technology, Pasley said.

Pasley, who spoke with Computerworld last week at the Cellular Telecommunications and Internet Association's trade show here, said the airtime price that Memphis-based FedEx negotiated with Redmond, Wash.-based AT&T Wireless will be about the same as the cost of maintaining the aging private network. For competitive reasons, Pasley declined to provide details of the pricing he negotiated with AT&T.

FedEx doesn't pay airtime charges for its 20-year-old private wireless network, Pasley said, but the company has to maintain towers and a network of 250 radio repeaters — devices that send a signal from one tower to another — as well as the wire-line networks that hook the wireless network into its systems.

FedEx intends to use the AT&T Wireless network and capacity to initially supplement its private network in large metropolitan areas. The resources of the private network will be redeployed to serve smaller areas, Pasley said.

Ken Dulaney, an analyst at Gartner Inc. in Stamford, Conn., said that makes sense, because "cellular carriers like AT&T will equip high-population or well-traveled areas with [GPRS and] Global System for Mobile Communications networks[.]" But carriers won't put towers in rural areas because there's "no money to be made" in those locations, he said.

The AT&T network will be used to support the PowerPad

tracker device, which FedEx is developing based on the Microsoft Power PC operating system, Pasley said. The Power-Pad will use Bluetooth short-range wireless communications to feed data from the handheld computer to phones that couriers will wear on their belts. The phones will connect to the AT&T Wireless network.

Pasley gave few details about PowerPad, saying it's still under

development. But, he said, FedEx wants it equipped with voice recognition technology. Symbol Technologies Inc. in Holtsville, N.Y., and Motorola Inc. in Schaumburg, Ill., are developing prototypes of the PowerPad hardware, he said. ◗

Handhelds Go Wireless

ORLANDO

Microsoft and its hardware partners last week introduced "always-on" Pocket PC-based handhelds configured to operate on the wet works of four U.S. cellular carriers.

This full-force push into the U.S. cellular network market, announced here at the annual Cellular Telecommunications and Internet Association trade show, builds on devices Microsoft already sells in Europe and in parts of Asia for use on the Global System for Mobile Communications standard.

According to Ed Suwanjindar, product manager in Microsoft's mobility group, the carriers will sell the hardware in much the same way they sell phones as part of a service package that includes airtime. Microsoft intends to help the carriers develop enterprise offerings "by introducing them to our existing customer base," Suwanjindar said. "We want to help [the carriers] make a compelling business case for these devices."

Meanwhile, Handspring Inc. in Mountain View, Calif., which sells handhelds based on Palm Inc.'s Palm operating system, announced agreements to furnish its Treo communicator for use on the networks of two carriers.

Despite Handspring's two deals, analysts said Microsoft, which launched the Pocket PC in April 2000, has gained important momentum over the Palm system.

Isaac Ro, an analyst at Boston-based Aberdeen Group Inc., said that with the four carrier deals, Microsoft has gained a lead in the handheld computing market pioneered by Santa Clara, Calif.-based Palm — especially within the enterprise market. "This is another squandered opportunity in the enterprise" on Palm's part, Ro said.

Daphne Jackson, a spokeswoman for Palm, said the company no longer dominates on the new Microsoft wireless products and services.
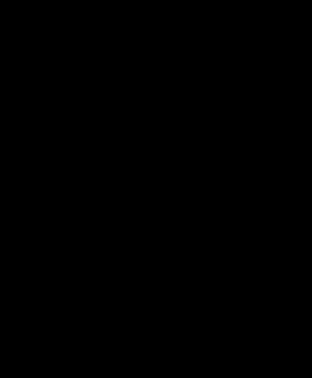
– Bob Brewin

Handheld Wireless Wars

Microsoft and Handspring will offer handheld computers and Microsoft Smartphones capable of operating on the networks of four of the top five U.S. carriers.

			Microsoft	Handspring
Cingular Wireless	Pocket PC, Microsoft Smartphone, Handspring Treo		65M	21.6M
Sprint PCS Group	Pocket PC, Treo		Code Division Multiple Access (CDMA)	15.8M
Verizon Wireless	Pocket PC		CDMA	29.4M
VoiceStream Wireless	Pocket PC		65M	7M

BRIEFS

Microsoft Warns of Second Java Flaw

Microsoft Corp. warned of a second security vulnerability in Java virtual machine code that could affect companies that have proxy servers between their Web browsers and the Internet. The newly identified flaw could let attackers use Java applets to access PCs and run code as if they were the authorized users. Microsoft said a fix that was released early this month for the first vulnerability will also fix the second one.

Oracle to Support 9i On Linux Mainframes

Oracle Corp. said it plans to release by midyear a version of its 9i database that supports IBM mainframes running the Linux operating system. Developer releases of the Linux-based 9i software are available now and can be downloaded for free from Oracle's Web site. Oracle said the mainframe Linux version of 9i will be priced according to the company's standard licensing model.

Study: Certifications Help Protect Bonuses

IT workers with technical certifications have done better on bonuses during the past five quarters than those who aren't certified, according to a study of more than 1,000 employers in North America and Europe by Foote Partners LLC in New Canaan, Conn. The average bonuses given to workers with certifications remained steady as a percentage of their base pay, Foote said.

Short Takes

Linux vendor RED HAT INC. in Research Triangle Park, N.C., reported a $41.9 million net loss on revenue of $18.5 million for its fourth quarter ended Feb. 28. . . . INTEL CORP. announced a low-voltage Pentium III chip for use in dual-processor blade servers and said it expects systems to debut later this year.

FedEx Expands Net Reach to Mobile Data

Augments private network to support high-bandwidth data

BY BOB BREWIN
ORLANDO

FEDEX CORP. has signed a five-year deal to use AT&T Wireless Services Inc.'s next-generation mobile data network to support new, high-bandwidth applications to be used by its 40,000 couriers. Analysts said the move demonstrates that commercial mobile data services are becoming a reality for enterprise users.

FedEx also disclosed that it has selected Microsoft Corp.'s Pocket PC operating system as the technology for its next-generation mobile scanner and package-tracking device, which will be called PowerPad.

Ken Pasley, FedEx's director of wireless systems development, said the AT&T Wireless General Packet Radio Service (GPRS) network "gives us significantly more bandwidth" than the company's private network and will allow FedEx to expand the types of applications used on tracking devices. The throughput of the GPRS network is about 20K to 40K bit/sec., compared with the 19.2K bit/sec. that FedEx currently gets on its nationwide private network. The new network will allow couriers to send fat files such as digital signatures and could also support voice recognition technology, Pasley said.

Pasley, who spoke with *Computerworld* last week at the Cellular Telecommunications and Internet Association's trade show here, said the airtime price that Memphis-based FedEx negotiated with Redmond, Wash.-based AT&T Wireless will be about the same as the cost of maintaining the aging private network. For competitive reasons, Pasley declined to provide details of the pricing he negotiated with AT&T.

FedEx doesn't pay airtime charges for its 20-year-old private wireless network, Pasley said, but the company has to maintain towers and a network of 760 radio repeaters — devices that send a signal from one tower to another — as well as the wire-line networks that hook the wireless network into its systems.

FedEx intends to use the AT&T Wireless network and capacity to initially supplement its private network in large metropolitan areas. The resources of the private network will be redeployed to serve smaller areas, Pasley said.

Ken Dulaney, an analyst at Gartner Inc. in Stamford, Conn., said that makes sense, because "cellular carriers like AT&T will equip high-population or well-traveled areas with [GPRS and] Global System for Mobile Communications networks[.]" But carriers won't put towers in rural areas because there's "no money to be made" in those locations, he said.

The AT&T network will be used to support the PowerPad tracker device, which FedEx is developing based on the Microsoft Power PC operating system, Pasley said. The PowerPad will use Bluetooth short-range wireless communications to feed data from the handheld computer to phones that couriers will wear on their belts. The phones will connect to the AT&T Wireless network.

Pasley gave few details about PowerPad, saying it's still under development. But, he said, FedEx wants it equipped with voice recognition technology. Symbol Technologies Inc. in Holtsville, N.Y., and Motorola Inc. in Schaumburg, Ill., are developing prototypes of the PowerPad hardware, he said. ◗

Handhelds Go Wireless

ORLANDO

Microsoft and its hardware partners last week introduced "always-on" Pocket PC-based handhelds configured to operate on the networks of four U.S. cellular carriers.

This full-force push into the U.S. cellular network market, announced here at the annual Cellular Telecommunications and Internet Association trade show, builds on devices Microsoft already sells in Europe and in parts of Asia for use on the Global System for Mobile Communications standard.

According to Ed Suwanjindar, product manager in Microsoft's mobility group, the carriers will set the hardware in much the same way they sell phones as part of a service package that includes airtime. Microsoft intends to help the carriers develop enterprise offerings "by introducing them to our existing customer base," Suwanjindar said. "We want to help [the carriers] make a compelling business case for these devices."

Meanwhile, Handspring Inc. in Mountain View, Calif., which sells handhelds based on Palm Inc.'s Palm operating system, announced agreements to furnish its Treo communicator for use on the networks of two carriers.

Despite Handspring's two deals, analysts said Microsoft, which launched the Pocket PC in April 2000, has gained important momentum over the Palm system.

Isaac Ro, an analyst at Boston-based Aberdeen Group Inc., said that with the four carrier deals, Microsoft has gained a lead in the handheld computing market pioneered by Santa Clara, Calif.-based Palm – especially within the enterprise market. "This is another squandered opportunity in the enterprise" on Palm's part, Ro said.

Daphne Jackson, a spokeswoman for Palm, said the company had no immediate comment on the new Microsoft wireless products and services.

– *Bob Brewin*

Handheld Wireless Wars

Microsoft and Handspring will offer handheld computers and Microsoft Smartphones capable of operating on the networks of four of the top five U.S. carriers.

	Device	Network	Price
Cingular Wireless	Pocket PC, Microsoft Smartphone, Handspring Treo	GSM	$549
Sprint PCS	Pocket PC, Treo	Code-Division Multiple Access (CDMA)	$549
Verizon Wireless	Pocket PC	CDMA	$549
VoiceStream Wireless	Pocket PC	GSM	$549

Medicare Insurer Reaps $10M ROI on Storage Consolidation

Carrier: IBM technology cheaper, faster

BY LUCAS MEARIAN

LESS THAN A YEAR after it spent about $10 million to consolidate its storage-area network infrastructure, one of the nation's largest Medicare carriers says that it's beginning to reap a full return on its investment and has saved an additional 40% on its hardware costs.

Wisconsin Physicians Service Insurance Corp. (WPS) processes about 360,000 claims each day for Medicare and military insurance accounts. In recent years, the Madison, Wisbased insurer has added Illinois, Michigan and Minnesota to its Medicare rolls, which in turn has led to a leap in annual claims, from the $840 million it was processing in 1997 to just over $7 billion last year.

Randy Lengyel, senior vice president of information systems at WPS, said the increase in claims processing forced the company to revisit its business partnerships with technology vendors. That led to a major shift, as WPS replaced Hitachi Data Systems Corp. equipment with IBM products in June.

The insurer had been using Santa Clara, Calif.-based HDS's high-end 7700 disk array with 2.9TB of capacity, as well as four HDS midrange arrays with 1TB of capacity each. It replaced them with two IBM Shark Enterprise Storage System Servers with a combined capacity of 1L6TB. It also replaced HDS's Pilot 77 mainframe with IBM's z/900 model.

An HDS spokeswoman said the company's choice of IBM technology had more to do with the insurer not being al-

lowed to continue reselling HDS's midrange RAID device, an accusation WPS1 denied.

Jim Wang, director of enterprise network services at WPS, said HDS's technology was dependable, fast and easy to man-

age, but IBM won out on price, speed and interoperability. "On the performance side, IBM has the same rating in MIPS as Hitachi, but while the new z/900 has the same number of MIPS, it's running a lot faster, so our batch windows are a lot shorter," Wang said. "Our technicians are a lot happier about this."

The upgrade allows WPS to take a single "snapshot" of its mainframe, tape, LAN and open systems server environment in just under two hours using 30 tapes. Previously, it took the insurance company six hours and 430 tape cartridges just to get a snapshot of its mainframe environment each week, said Lengyel.
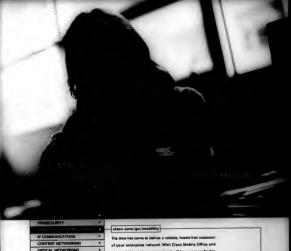
However, the role of the NIPC remains a contentious issue on Capitol Hill, where the national security community has complained of what it sees as the NIPC's inability to share strategic warning information in a timely manner. Also, many companies remain hesitant to share sensitive of proprietary data without assurances that the information won't be inadvertently disclosed to competitors.

Quick Link

FBI Hints at Dismantling Cyberthreat Arm

Private-sector trust at stake, say critics

BY DAN VERTON
WASHINGTON

A decision by FBI Director Robert Mueller is expected this week on a plan to dismantle the FBI's cyberthreat warning arm, the National Infrastructure Protection Center (NIPC). Such a move could reverse years of progress made toward improving information-sharing between the private sector and the government, critics warned.

Mueller is poised to decide whether to break up the NIPC and transfer pieces of the organization to the FBI's criminal, counterterrorism and counterintelligence, law enforcement services and administration divisions. The FBI wouldn't comment on the plan, which Mueller first outlined last month in private meetings with members of Congress.

Ronald Dick, the NIPC's director, said any word of a final decision is speculation. Dick said Mueller "is a strong supporter of the NIPC and hasn't made a final decision on what will be in the new cybercrime division, nor how that will impact the NIPC, if at all."

In a March 19 letter to the FBI director that was obtained by *Computerworld* and The

Associated Press, Sen. Charles Grassley (R-Iowa), a member of the Judiciary Committee, told Mueller that the plan "would destroy the fragile trust between NIPC and the private sector, which controls 90% of the nation's critical infrastructure." He also urged Mueller not to dismantle the NIPC by burying it within the "heavy-handed management and culture" of the FBI's criminal division.

"To deepen the association of NIPC with the most powerful law enforcement agency in the nation would only exacerbate the fear the private sector has about sharing critical information necessary for the success of NIPC," Grassley wrote. "Even worse, I have been informed by members of the private sector that many companies and other organizations, including [information-

sharing and analysis centers], would immediately cut off the flow of infrastructure information to the FBI if NIPC is dismantled."

Steven Budget Committee handed Grassley's tactical victory last week by passing a sense-of-the-Senate resolution denying the FBI additional money for the NIPC should the bureau move to subsume the agency.

Although they are nonbinding, such sense resolutions carry influence with appropriators on Capitol Hill. In a statement, Grassley called the committee's resolution a "positive step toward ensuring that the [NIPC] remains intact."

Established in February 1998, the NIPC's mission is "to detect, deter, assess and warn" the government and the private sector of significant threats to Internet security.

Phyllis Schneck, a vice president at Atlanta-based security consulting firm SecureWorks Inc. and co-chairwoman of the FBI's InfraGard program, said that regardless of any reorganization, "at the top of the priority list for the private sector is continuing to work closely with the NIPC to exchange as much information as possible."

The InfraGard program, a public/private cybercrime security initiative with chapters managed out of the FBI's 56 field offices, currently has more than 3,500 private-sector members.

NIPC Timeline

Ronald Dick appointed director of NIPC, he inherits an organization still in start-up mode and lacking staff expertise.

Dick informs core infrastructure NIPC along the lines of Centers for Disease Control.

Feb. 1998	March 2001	Dec. 2001	Jan. 2002	Feb. 2002
NIPC established by U.S. Department of Justice and FBI as a government/private-sector partnership.		FBI announces a reorganization, including a new cybercrime division within its Criminal Investigation Division.		FBI outlines plans to break up NIPC and merge organization into various FBI divisions.

NEWS

DOD Policy

senior acquisition and technology official urging a full public review and discussion of a policy he referred to as "xenophobic."

"The implications could be substantial," wrote Miller in his letter to Edward Aldridge, the DOD's undersecretary for acquisition, technology and logistics. "America's defense readiness depends on having ready access to the best available technology and technical skill sets. Precipitous action here could make it much more difficult and expensive for the military services to acquire the requisite IT services."

The Pentagon hadn't replied to Miller by press time.

The potential change in DOD policy comes at a time when the pool of U.S. citizens with IT skills is shrinking rapidly and many companies are off-setting higher salaries demanded by U.S. workers with overseas talent.

"When you look at the normal pool of available IT people, we have a big problem," said Anthony Valetta, former acting assistant secretary of defense and currently a vice president at SRA International Inc., a defense contractor in Fairfax, Va.

'A Bigger Problem'

"Those people are not your average American kids anymore," said Valetta. "If this happens beyond the DOD, we have a bigger problem on our hands."

That's exactly what some business executives, like Vince Coll, president of iConcepts Inc., an IT outsourcing firm in

THE DOD, housed in the Pentagon (above), is thinking about barring foreign IT workers from taking part in DOD projects in the wake of Sept. 11.

Landsdale, Pa., fear most. A governmentwide ban on noncitizens would significantly drive up the costs for many companies that now do a lot of software development offshore, he said.

"The whole industry would

he severely damaged, as would the government," said Coll, whose company just a bid to be a subcontractor to a major defense firm because iConcepts software code was written in Bulgaria.

Chip Mather, a defense ac-

quisition analyst at Acquisition Solutions Inc. in Chantilly, Va., said such a policy would be almost impossible to impose due to the makeup of the current IT labor pool and the fact that a lot of software development and related tasks are done overseas and not in DOD facilities. "I'd be more concerned about the coders than I would be about the people on-site," said Mather. However, he added, "there's no direct correlation between citizenship and a person's desire not to commit espionage."

Miller reiterated that message in his letter to the Pentagon. "Public policy must be based on real-world actions and tangible threats — not supposition and innuendo," he wrote. "During the 1990s, [U.S.] citizens perpetrated several of the most damaging intelligence leaks in U.S. history." ◘

Oracle

without charging them additional fees, Woods said. Seven such users have been identified thus far, she noted.

But some users who have recently been approached by Oracle on pricing issues said the process wasn't a pleasant one.

"I want them to quit changing the rules," said the vice president of information systems at a manufacturer in the Midwest that was audited by Oracle late last year. The company is now shifting from named user database licensing to processor-based pricing and thinks it will be better off as a result, said the IT manager, who requested anonymity. But the auditing process "doesn't allow for any negotiation of any sort," the manager said.

Mark Paris, director of management information systems at Kleinfelder Inc., said the San Diego-based construction management and engineering services firm hasn't been formally audited by Oracle. But Oracle representatives told Paris earlier this year that they wanted to "evaluate our database license" to ensure that

Kleinfelder wasn't paying too much money.

Paris said the result was a proposal that Kleinfelder switch from named user to perprocessor pricing, with Oracle citing the fact that the company has more licensed users for its Web-based applications than it does for the database itself. But the switch would increase Kleinfelder's database license and support costs from $7,000 to $212,000, according to Paris.

"As far as I am concerned, we are not going to do anything right now," Paris said. But, he added, he assumes that the licensing situation "is far from being resolved."

'A Dangerous Precedent'

Last week's controversy began when Stamford, Conn.-based consulting firm Meta Group Inc. issued a statement saying that some of its clients were upset by what it claimed was a decision by Oracle to change the way it defines a process known as multiplexing (see story at right).

In a statement, Meta Group analyst Charlie Garry described the alleged new interpretation as "bizarre" and said Oracle appeared to be using it to try to get additional revenue

from its installed base. The consulting firm urged users to resist any attempts by Oracle to increase their license fees because of the multiplexing issue, "in court if necessary."

If Meta Group's claims are accurate, Oracle could be setting "a dangerous precedent" that could result in unreasonable software license costs for users, said Jim Prevo, CIO at Green Mountain Coffee Inc. in Waterbury, Vt. It has named user database licenses but hasn't been audited by Oracle, he said.

Woods claimed that Meta Group misunderstood the terms of Oracle's licensing policy. She accused the consulting firm of giving its clients erroneous advice and insisted that Oracle treats its customers fairly.
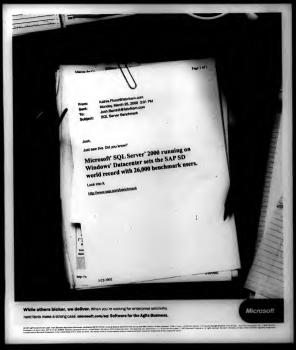
"We're not especially tough [on users], but it's very clear that if you have 500 named users and only license 200, you are out of compliance," Woods said. "If you are out, we're going to work with you to get you in compliance."

But three other analysts said they have heard similar reports about Oracle trying to squeeze more revenue out of its users. The Meta Group claims were "correct insofar as what is hap-

pening in the field," said Betsy Burton, an analyst at Gartner Inc. in Stamford, Conn. "We're absolutely seeing Oracle try and charge customers in all sorts of different ways."

Woods said 15% to 20% of Oracle's database customers have

named user licenses, which cost $800 per user for the enterprise edition of the software. By contrast, the processor-oriented pricing that Oracle announced last June to replace a controversial capacity-based approach costs $40,000 per CPU. ◘

Multiplexing Software Fuels Controversy

The licensing controversy revolves around a somewhat esoteric issue: the use of multiplexing software by companies that have named user database licenses.

Meta Group analyst Charlie Garry said multiplexing usually involves using Web server software or a transaction processing engine to provide a shared pool of connections to a database. That can mask the true number of end users who tap into the database and should have licenses.

But now, Garry said, it appears that Oracle is expanding the definition of multiplexing to include batch loads of data from non-Oracle applications into its databases.

That interpretation could particularly affect companies that use Oracle databases to warehouse information from a variety of source applications, Garry said. Previously, a batch load was covered by the cost of a single named

user license, he claimed.

But some Meta Group clients have reported that Oracle is now saying that batch loads qualify as multiplexing software, requiring them to buy licenses for all the users of the source applications. One company was told that it would have to pay $2.2 million to become compliant, Garry said.

However, Jacqueline Woods, vice president of global practices at Oracle, said the software vendor's multiplexing policy has remained consistent for the past several years. Only end users or, in some rare cases, devices such as routers and switches are considered eligible for named user status, she said.

In a statement, Oracle said users who are affected by the multiplexing issue should contact its pricing department "for further clarification and resolution."

— Marc L. Songini

Making the C...   Page 1 of 1

From: Kathie.Flood@tabrikam.com
Sent: Monday, March 25, 2002 3:01 PM
To: Josh.Barnhill@tabrikam.com
Subject: SQL Server Benchmark

Josh,

Just saw this. Did you know?

Microsoft® SQL Server™ 2000 running on Windows® Datacenter sets the SAP SD world record with 26,000 benchmark users.

Look into it.

http://www.sap.com/benchmark

http://w...   3/25/2002

NEWS

JavaOne to Focus on Web Services Tools

IBM, Sun, BEA try to lure users away from Microsoft's .Net development environment

BY CAROL SLIWA

FEW CORPORATE USERS have rushed to build Web services, but that won't stop scores of vendors at this week's JavaOne conference from positioning their platforms as better for developing those services than Microsoft Corp.'s rival .Net environment.

JavaOne sponsor Sun Microsystems Inc., along with IBM and San Jose-based BEA Systems Inc., will lead a charge of vendors announcing product enhancements and tools in support of Web services. These services are aimed at helping companies integrate internal applications and link to business partners' external applications and services through XML-based messages sent via the Simple Object Access Protocol.

Microsoft's rivals see this week's conference as an opportunity to try to silence critics who claim that they have fallen behind in their support of emerging Web service technologies. Simon Phipps, Sun's chief Java technology evangelist, said the Web service standards work performed through the Java Community Process took time, but "now, at JavaOne, you're beginning to see the outpouring of announcements that flow from having defined standards for Web services."

Microsoft threw down the gauntlet earlier this year, claiming that its newly released Visual Studio .Net environment is the best and most economical platform for building Web services.

Meanwhile, the Java forces are releasing only an early-access version of a Web services development package that contains application programming interfaces (API) for XML-based parsing, messaging and remote procedure calls. The API package will be built into the 1.4 edition of Java 2 Enterprise Edition (J2EE), but that's not expected to be finalized until the first quarter of next year, Sun officials said.

Several analysts said that Java vendors should catch up within a year and that they don't expect Microsoft to gain an overwhelming advantage in this early stage in the Web services market.

It's not a huge factor now anyway, since few users have gotten beyond the exploration stage with Web services. Curtis Chambers, a senior IT manager at The Home Depot Inc. in Atlanta, said he will consider a Web services model for exchanging information with vendor partners. But right now, Home Depot is focused on rolling out its new IBM WebSphere application server and getting up to speed on Enterprise JavaBeans.

"We really haven't focused on Web services," Chambers said. "I think that's going to be in the next year, once we get the J2EE stuff out there."

Right now, IBM is releasing a free, private Universal Description, Discovery and Integration (UDDI) registry that companies can use behind their firewalls to store information about the way applications can interoperate with one another.

Scott Cosby, manager of WebSphere business process integration, said IBM is responding to customers who said they want to experiment internally with Web services before they consider using public UDDI registries.

IBM today will also launch a WebSphere Studio Integration Edition tool that gives developers a visual drag-and-drop en-

vironment to build applications or Web services that can connect Java applications to each other, non-Java applications or Web services. In conjunction with the release of the new tool, IBM is shipping Version 4.1 of its WebSphere application server.

BEA, meanwhile, will officially turn over its file format for describing Web services — which is the basis for the runtime framework of its new WebLogic Workshop tool — to Sun's Java Community Process for standardization. **◗**

IBM, Sun Spearhead Portal Interoperability Standards Effort

Corporate users who are hoping for a standard way to infuse content into their portals may get some relief late this year.

IBM and Sun Microsystems today will announce a joint effort to spearhead the creation of a Java specification to define an API for building portals, the snippets of code that permit applications or content to be integrated into portals, said Tim Thatcher, program director at portal solutions at IBM.

Portals are central Web sites that can pull content from a wide range of internal and external sources, including enterprise resource planning and customer relationship management applications, mail servers and other Web sites.

"The portal product market has been suffering from a lack of interoperability standards since its creation four years ago," said Gene Phifer, an analyst at Stamford, Conn.-based Gartner Inc. "This is going to be the first baby step toward interoperability standards for portals."

Craig Harrison, director of shared services and extranet headquarters information systems at The Boeing Co. in Chicago, which has lent its official support to the portal standards effort, said his company buys content and

then must have a proprietary format to get that content to appear in its portal from San Francisco-based Plumtree Software Inc.

Harrison said his firm would rather buy access to the content and not have to write code. That would be easier if content providers could write to one standard, rather than having to write to the proprietary formats of the different portal vendors, he noted.

A portal standard could also prove useful if a portal software vendor went out of business, Harrison added.

Other companies supporting the portal standards effort include DaimlerChrysler AG, BEA, Hewlett-Packard Co., Oracle Corp. and SAP AG.

Phifer noted that a parallel portal standards effort is under way through the Billerica, Mass.-based Organization for the Advancement of Structured Information Standards (OASIS), a nonprofit industry consortium that develops XML-based interoperability specifications.

The OASIS portal effort aims to "create an XML and Web services standard that will allow for the plug-and-play of portals, other intermediary Web applications and applications from disparate sources," according to the OASIS Web site.

— Carol Sliwa

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By adding NetIQ Extended Management Pack modules, you can also monitor Windows NT 4.0 as well as other Microsoft servers; mission-critical

Sun Takes Over iPlanet As Partnership Ends

Observers predict that software, users may receive more focused attention now

BY TODD R. WEISS

SUN MICROSYSTEMS Inc. last week formally took sole control of the iPlanet e-commerce and middleware software it had jointly developed with Netscape Communications Corp. for the past three years. Some users and analysts said the move could give iPlanet a needed shot in the arm.

Sun and Netscape, based in Mountain View, Calif.-based iPlanet E-Commerce Solutions joint venture effective March 17, hewing to plans that were disclosed last fall by Sun executives. The iPlanet operation is now a division of Sun, which owns all intellectual property rights to the software.

Sun plans to solidify the standing of iPlanet's technology as a core component of its Sun Open Net Environment software line, according to a

letter that was sent to customers by Sun CEO Scott McNealy two days before the alliance with Netscape ended.

The iPlanet products include e-commerce software and middleware tools such as application, directory, messaging and Web servers. In his letter, McNealy said iPlanet is "critical to Sun" and described the venture with Netscape as "a remarkable success."

Companies Didn't Gell

But David Smith, an analyst at Gartner Inc. in Stamford, Conn., said the partnership between Sun and the AOL Time Warner Inc. subsidiary turned out to not be as good a fit as the companies had hoped.

"The alliance did not live up to its potential," Smith said, adding that Sun and Netscape never fully gelled with one another. Some iPlanet applications, such as the e-mail and

directory servers, have been commercially successful, but others haven't done as well in the market, Smith said.

For iPlanet users, the end of the alliance probably won't produce any immediate negative changes, Smith said. Instead, he predicted, the software will likely get more focused attention now that it's being developed solely by Sun.

AT A GLANCE

iPlanet Alignment

The iPlanet line includes the following key technologies:

Application Server: Java 2 Enterprise Edition-based software for use in developing and managing e-commerce applications.

Directory Server: A central repository for storing and managing user identity profiles and access privileges.

Portal Server: A tool that supports the deployment of Web-based portal applications.

Web Server, Enterprise Edition: Software targeted at use in running large-scale e-commerce Web sites.

That's the prevailing view at the Chicago-based American Hospital Association, which is installing Sun hardware and iPlanet software to set up a unified server farm and single end-user portal for 38 Web sites that are operated by different groups under its organizational umbrella.

The breakup of the alliance with Netscape won't affect those plans, said Herman Baumann, the association's executive director of business development. "If anything, it's been better because we've been able to work [more directly with Sun] on a cohesive basis," Baumann said, referring to changes that were made informally before the breakup became official.

When the hospital association was weighing what software to use as part of the project, the joint venture "didn't play a role in whether we went with iPlanet or not," he added.

iPlanet E-Commerce Solutions began as an alliance between Sun and Netscape to develop a software platform for the creation and delivery of Web services. Sun said the venture was ended under terms set when the deal was first signed. Under the agreement, iPlanet's employees will be fully under the wing of Sun. Financial details weren't disclosed. ◘

Authors Pull Proposal on Bug Reports

IETF members object to lack of prior input

BY LINDA ROSENCRANCE

The authors of proposed guidelines on how software security holes should be reported to vendors and fixed have withdrawn the document from the Internet's main standards-setting body, the Internet Engineering Task Force (IETF).

The draft proposal aims to settle an ongoing dispute among software vendors, users and security analysts over public disclosures of vulnerabilities in products. It gives vendors 30 days to resolve software flaws before any disclosures are made but also allows them to request extensions.

The proposal was withdrawn because there was no consensus among IETF members about the need for such guidelines, according to the IETF and Steve Christey, lead information security engineer at Mitre Corp. in Bedford, Mass. Christey is one of the two authors of the proposal.

In addition, IETF members weren't pleased that the document, called the Responsible Vulnerability Disclosure Process, was submitted to the group without first soliciting its opinions. The authors of the proposal "didn't want input," said Jeffrey Schiller, area director for security within the IETF. "We're open to input. We're not a rubber stamp."

Christey said the authors consulted 10 individuals and organizations, including Microsoft Corp., while they were preparing their proposal. He said they planned to consult with IETF security officials before submitting the document but were unable to do so because the draft was leaked to the public. ◘

Free Ride Ends for StarOffice Suite, but Support Starts

After giving away its StarOffice desktop applications for the past two years, Sun last week said it will begin charging for the software in May. But the company also plans to add a set of fee-based support services aimed at corporate users.

That's a big change for Sun, which doesn't offer technical support, education help or other services with the free versions of StarOffice that can be downloaded from its Web site. The entire process of downloading and using the suite has been an online endeavor, said Mike Rogers, vice president of Sun Microsystems' Marketing Group.

The importance of support was announced home to Sun by users who are betting using StarOffice 6.0.

"[We] are seeing about [getting

beg] a product without support and training to [run it now], said Mike Rogers, vice president of desktop and office productivity applications at Sun. "Our beta testers told us they wouldn't standardize on a product without that."

On the other hand, users said they would be willing to pay for the software if Sun offered support services, Rogers added. With the new plan, "we've responded to the feedback," he said. "We want people to use this product."

For corporate users, the new approach will matter what Sun described as "a nominal charge" for the Office based on a fixed, per-user pricing model. A Web-based user training tool will be bundled with the software.

Services such as help-desk

training, direct end-user support and deployment assistance will be offered on a contract basis. Pricing will be announced when StarOffice 6.0 is released, Sun said.

Rob Enderle, an analyst at Giga Information Group Inc. in Cambridge, Mass., said he agrees the charging for the software could give Sun credibility among corporate IT managers who might have overlooked the free version.

"The problem with a free product is that no one really believes you're going to stick with it," Enderle explained.

Sun's timing could be right because many corporate users are still angry at the new licensing fees that Microsoft implemented on its Office software last year, he added. "The com/business tech it as a better

crease" for using Microsoft's products, Enderle said.

But Joshua Greenbaum, an analyst at Enterprise Applications Consulting in Daly City, Calif., said it will still be hard to compete with Office. Microsoft's desktop software monopoly is so well established that StarOffice "could have been the world's greatest office suite, and it still wouldn't have made a dent," Greenbaum said.

Users who don't want to buy StarOffice won't be completely left out in the cold. Free downloads of a less sophisticated open-source version of the software will still be available on the Sun-sponsored Web site at www.openoffice.org.

— Todd R. Weiss

Tom Krazit of the IDG News Service contributed to this report.

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The iPlanet products include e-commerce software and middleware tools such as application, directory, messaging and Web servers. In his letter, McNealy said iPlanet is "critical to Sun" and described the venture with Netscape as "a remarkable success."

Companies Didn't Gel

But David Smith, an analyst at Gartner Inc. in Stamford, Conn., said the partnership between Sun and the AOL Time Warner Inc. subsidiary turned out to not be as good a fit as the companies had hoped.

"The alliance did not live up to its potential," Smith said, adding that Sun and Netscape never fully gelled with one another. Some iPlanet applications, such as the e-mail and

directory servers, have been commercially successful, but others haven't done as well in the market, Smith said.

For iPlanet users, the end of the alliance probably won't produce any immediate negative changes, Smith said. Instead, he predicted, the software will likely get more focused attention now that it's being developed solely by Sun.

That's the prevailing view at the Chicago-based American Hospital Association, which is installing Sun hardware and iPlanet software to set up a unified server farm and single end-user portal for 38 Web sites that are operated by different groups under its organizational umbrella.

The breakup of the alliance with Netscape won't affect those plans, said Herman Baumann, the association's executive director of business development. "If anything, it's been better because we've been able to work [more directly with Sun] on a cohesive basis," Baumann said, referring to changes that were made informally before the breakup became official.

When the hospital association was weighing what software to use as part of the project, the joint venture "didn't play a role in whether we went with iPlanet or not," he added.

iPlanet E-Commerce Solutions began as an alliance between Sun and Netscape to develop a software platform for the creation and delivery of Web services. Sun said the venture was ended under terms set when the deal was first signed. Under the agreement, iPlanet's employees will be fully under the wing of Sun. Financial details weren't disclosed. ◗

Authors Pull Proposal on Bug Reports

IETF members object to lack of prior input

BY LINDA ROSENCRANCE

The authors of proposed guidelines on how software security holes should be reported to vendors and fixed have withdrawn the document from the Internet's main standards-setting body, the Internet Engineering Task Force (IETF).

The draft proposal aims to settle an ongoing dispute among software vendors, users and security analysts over public disclosures of vulnerabilities in products. It gives vendors 30 days to resolve software flaws before any disclosures are made but also allows them to request extensions.

The proposal was withdrawn because there was no consensus among IETF members about the need for such guidelines, according to the IETF and Steve Christey, lead information security engineer at Mitre Corp. in Bedford, Mass. Christey is one of the two authors of the proposal.

In addition, IETF members weren't pleased that the document, called the Responsible Vulnerability Disclosure Process, was submitted to the group without first soliciting its opinions. The authors of the proposal "didn't want input," said Jeffrey Schiller, area director for security within the IETF. "We're open to input. We're not a rubber stamp."

Christey said the authors consulted 10 individuals and organizations, including Microsoft Corp., while they were preparing their proposal. He said they planned to consult with IETF security officials before submitting the document but were unable to do so because the draft was leaked to the public. ◗

EMC Seeks Dell's Aid On Production Costs

Duo considers expanding midrange resale deal to include manufacturing

BY LUCAS MEARIAN

EMC CORP.'S strategic focus on big-ticket disk arrays has put it in a tough sales position during the current period of corporate belt-tightening. Now the storage vendor is looking to Dell Computer Corp. for help in reducing the production costs on its Clariion midrange arrays.

Five months after announcing that Dell would resell Hopkinton, Mass.-based EMC's Clariion devices, the two companies last week said they're discussing the idea of having the computer maker take over some of the manufacturing of the Clariion product line.

Nothing has been finalized, but EMC said it wants to take advantage of Dell's volume manufacturing capabilities as part of its effort to win back market share that it has lost to storage rivals such as IBM and Compaq Computer Corp.

"What Dell is good at is taking components and manufacturing systems that are commodities and spitting them out in volume," said EMC spokesman Michael Gallant. "They have great purchasing power and supply chain expertise. That's what we're hoping to leverage."

Gallant noted that EMC makes the Clariion arrays at plants in Apex, N.C., and Cork, Ireland, but it doesn't have any production facilities in Latin America or Asia. Dell does, he said, so "one could deduce that they could augment our manufacturing there."

Word of the manufacturing talks came as EMC and Dell jointly announced upgraded versions of three Clariion-related storage management software products (see box).

EMC acquired the Clariion line when it bought Data General Corp. three years ago. But analysts said EMC's sales of the midrange arrays have remained sluggish, due partly to the company's emphasis on its high-end Symmetrix devices.

Carolyn DiCenzo, an analyst at Gartner Inc. in Stamford, Conn., said EMC has had trouble motivating its Symmetrix-oriented sales force to jump on the midrange storage bandwagon because the Clariion arrays have lower selling prices.

Letting Dell take a leading role in selling Clariion "makes a lot of sense," DiCenzo said. "EMC needs a good distributor for the Clariion line." And Dell is very effective at distributing products, she added.

As part of the reseller deal, which was announced in October, Dell is positioning the Clariion devices for use by companies with mixed installations of servers — a switch from its previous strategy of selling storage products only to users with Dell machines.

Frank Frankovsky, senior manager of Dell/EMC product management at Dell, said Clariion users can set up a full storage-area network built around the disk arrays for $70,000 to $100,000. That price was comparable to the $100 to $300 per gigabyte that users were paying when the Clariion line was introduced in 2000.

It's much more affordable now, Frankovsky said. He was unable to make the $100 cheaper by using less expensive disk technology than it puts in its flagship network-attached storage devices.

"These are not as high-performing disks as you would see in other NetApp filers, and the idea is that they don't have to be [because of the focus on backup speed]," McAdam said.

Network Appliance in December detailed its plans to field a line of backup devices. As part of last week's release of the R100, the company introduced several data backup and recovery software tools for use with the new file server (see box). Network Appliance said the R100 will also work with storage management software developed by 10 other vendors.

Ray Villeneuve, vice president of marketing at Network Appliance, said the vendor hopes to convince companies that have multiple remote offices to off-load data backup from distributed tape libraries.

In addition to backup applications, the R100 can be used to set up online archives of data that doesn't need to be accessed frequently, Network Appliance said. Examples include product design drawings, historical financial data and billing records. ◗

Network Appliance Focuses On Data Backup Devices

Low-cost file server supports centralized archiving of data

BY LUCAS MEARIAN

Expanding its product line beyond the realm of primary storage devices, Network Appliance Inc. last week released the first member of a planned family of enterprise-class file servers for use in centrally backing up data from systems at multiple sites.

Sunnyvale, Calif.-based Network Appliance said the NearStore R100 can take data feeds from its own NetApp filers and from storage devices made by other vendors. The R100 scales from 12TB to 96TB and is aimed at giving users a single system for data backups before archiving data on tape.

Jamie Gruener, an analyst at The Yankee Group in Boston, said the R100 is Network Appliance's first product focused squarely on data migration and backup. "What they're doing is offering a consolidated backup appliance," he said.

That sets Network Appliance apart from rivals such as IBM and Hopkinton, Mass.-based EMC Corp. on product positioning, Gruener said. And the R100's base price of $240,000 is much lower than typical disk storage costs on a per-megabyte basis, he added.

Dianne McAdam, an analyst at Nashua, N.H.-based Illuminata Inc., said Network Appliance was

Not Just Hardware

AT A GLANCE

Network Appliance also introduced the following storage management tools:

◗ **SnapMirror**, for mirroring selected data sets for disaster recovery purposes

◗ **SnapVault**, for placing data "snapshots" on a central repository

◗ **SnapRestore**, for recovering files from backup copies of data

MARYFRAN JOHNSON

Dear Carly and Michael,

NOW YOU KNOW how Al Gore must have felt. All that politicking, all that ballot counting, all that nerve-racking uncertainty. And then our former vice president experienced the agony of defeat anyway. But if the final HP vote tallies really do approve this megamerger, you two will be headed

in a different sort of agony. You'll be attempting the biggest computer company merger in history with two weakened, battered companies and an unusually large contingent of hostile, demoralized employees.

But far more troubling is the growing disenchantment of your customers.

Six months ago, opinion surveys of CIOs and IT managers showed a relatively small percentage, maybe 15%, opposing this $25 billion merger. We were getting one big benefit of the doubt there, given this industry's lamentable history of botched high-tech mergers. But when we surveyed about 200 IT executives at Computerworld's Premier 100 IT Leaders conference two weeks ago, closer to 30% were negative on this deal. In another poll we conducted online among senior IT executives, some 54% of them said the merger "would cause them to re-evaluate doing business" with a combined HP/Compaq.

You know why their faith is eroding? Lack of information. Lack of attention. And most dangerously for you both, a perceived lack of concern about the fate of their IT investments in HP and Compaq technologies.

Of course, IT pros understand why your focus has been locked exclusively on shareholders, institutional investors and financial analysts for the past six months. They also realize your hands were tied by SEC rules governing mergers, so you couldn't talk openly about the fate

of all those overlapping, competing product lines.

That's all changed now. It's time to refocus on your customers and deliver what they need from you. For starters, show us the work of your integration task forces. Go public with those fabled product road maps, the ones sketching out the next three years of integration and combined product development plans. Turn your top executives loose in every key product segment to talk honestly about what products will live or die. Deliver specifics about the migration plans for those unlucky customers on the losing side of your choices.

Only a day after that contentious HP shareholder vote last week, analysts from Gartner were issuing pre-

dictions that your competitors could expect a "radical housecleaning of products," meaning dire consequences for Compaq's Tru64 Unix, OpenVMS and several HP storage platforms. True or false? You have those answers. Don't dodge the questions.

Gartner is also telling your customers to demand "steep, multiyear discounts" as HP/Compaq tries to "win business at all costs." So prepare to bargain. Your rivals at IBM, Sun and Dell have certainly wasted no time leveraging the growing uncertainty among your customers. Case in point: the recent loss of a flagship HP account at Nestle to IBM in a $500 million data center consolidation deal ["Nestle Shifts From HP to IBM In Data Center Pact," News, March 11]. How many more such losses can you afford?

Finally, pay some serious attention to the people factor. Don't say 15,000 job cuts if it's really going to be twice that number. Don't tell customers their familiar sales and support people will remain when you know how much turmoil lies ahead. IT managers want you both to succeed, to regain the market leadership you've lost. Don't keep them waiting much longer for the real answers. ◗

PIMM FOX

IT Talent Still Thriving In Big Cities

A NEW REPORT ABOUT IT skills reveals two trends: In the U.S., if you're hunting for IT talent, shop in the big metropolitan regions. Overseas, if you're in the market for IT professionals, Romania and China are hot spots to watch.

The study, conducted in 2001 by Chantilly, Va.-based Brainbench, amply belies reports that major U.S. metro regions are less attractive, at least for IT skills.

Last year's terror attacks provoked a wave of handwringing over the urban location of data centers and backup facilities, and of course redundant and secure facilities are a must for any IT operation. But the pool of talent could off-set plans to move IT operations to more remote locations.

The report, polling 750,000 of Brainbench's online test-takers, takes into account a variety of IT certification areas such as Active Server Pages, C, C++, computer technical support, HTML 3.2, HTML 4.0, Java 1, Java 2, JavaScript and network technical support.

The results showed that dot-bomb central — San Francisco — led the nation in the number of certified IT professionals. New York, which witnessed companies exiting downtown offices after the World Trade Center attack, came in second, followed by Washington, Chicago, Dallas, Los Angeles, Atlanta, Detroit, Seattle and Denver in the top 10.

Regions that have positioned themselves as the next Silicon Valley fell off the list, at least temporarily. Raleigh/Durham, N.C.; Minneapolis/St. Paul, Milwaukee/Racine; Greensboro/Winston-Salem/Highpoint, N.C.; St. Louis;

Austin, Texas; Dayton/Springfield, Ohio; and Las Vegas were all displaced from the top 10.

Brainbench President and CEO Mike Russiello said one reason for the shift may be the report's methodology. "Last year, we ranked IT certifications based on the quality of the score," he said. "The present survey looks at the total number of people who scored above a minimum level."

Even with the new criteria, the U.S. has the most certified IT professionals, with nearly 200,000, followed by India and the Russian Federation. The surprise is Romania, at No. 6. "IT is sort as adding value to the economy. And with increased offshore IT work, Romania is trying to carve out a niche as a low-cost IT center," said Russiello.

In China, which ranks No. 38 on the list, engineering graduates account for 37% of all university students, compared with just 6% in the U.S. So even though IT skills are supposed to foster higher-paying jobs, the supply of IT workers keeps a lid on wages.

The bottom line for now is that cities aren't dead and inexpensive IT talent is growing. ▶

MICHAEL GARTENBERG

Enough Is Enough With Microsoft Case

IT'S TIME TO CLOSE the book on the Microsoft antitrust case once and for all. Even after the settlement, nine of the 18 states that had joined the Justice Department suit continue to push the case. This is despite the fact that the appellate courts threw out the most egregious of charges against Microsoft and the Justice Department acknowledged that it settled the case because it felt that it would lose its court.

At the heart of the litigation by the states are the proposed sanctions. The states are asking that Microsoft be forced to offer different versions of Windows or create a "modular" version that could be stripped of a browser, media player or instant messaging client. All this, of course, is for the benefit of consumers. The only problem with this argument: The sole beneficiary of such sanctions against Microsoft would be Microsoft's competitors. (Some of the nine holdouts are home to some of Mi-

crosoft's biggest competitors.)

The truth is that enterprise, small business and consumer customers have all clearly benefited from the integrated features in Windows, as well as in other operating systems. Many of us recall the days when there was a thriving industry for TCP/IP, the core software that allows all PCs to connect to the Internet. One day, an operating system provider thought it would be more beneficial to customers if TCP/IP were included as part of the operating system, rather than sold as an add-on. To the chagrin of third-party vendors, it did just that and offered the first integrated TCP/IP stack and made it far easier for users to maintain, support and configure. The rub in the story is that the company wasn't Microsoft, but

Apple Computer. In order to help consumers, should the government not force Microsoft, Apple and others to strip TCP/IP software from their operating systems? After all, TCP/IP was once sold separately from operating systems.

Perhaps PC vendors shouldn't be immune either. I recall the days when a PC purchase meant the addition of a separate video card, sound card, optical drive, network interface card and modem. Today, these are all "integrated" features. They're matched, work without conflict and offer value to customers. Yet customers are free to upgrade and replace what they see fit, and despite the "bundling" of hardware features, the PC peripherals market thrives.

Critics of the Microsoft agreement

cite the diminished market share of Netscape Navigator vs. Internet Explorer as proof of Microsoft's wrongdoing. Having been an analyst in that space at the time, my view is that arrogance and incompetence led to Netscape's share loss.

The fact remains that despite fears, Microsoft doesn't own the media player space (RealNetworks' RealPlayer is doing nicely), nor handhelds (where Palm still holds the lion's share, with 70% of all handhelds running some form of Palm OS), nor has it gained the blessings of any of the leading cell phone vendors to adopt its smart phone platform. As for the emerging world of network-based services that will ultimately fuel the next generation of ubiquitous computing, no one owns it.

There's no doubt that some of Microsoft's business practices needed to be modified, and the DOJ and the company wisely agreed to terms to do just that. It's now time for the rest of the states to join in. ▶

READERS' LETTERS

No Sympathy for UCITA

ALEX TORRALBAS' column "Lost in the UCITA Fight" strikes me as a self-serving whine [News Opinion, March 11]. He fails miserably in his attempt to portray this flawed legislation as the sole hope for small software vendors to counter reverse-engineering, unauthorized copying and general legalistic strong-arm tactics by large customers.

Sadly, UCITA won't save the small software vendor's problems negotiating with large customers, because a customer will simply reject any overly restrictive contract. In November 2000, Computerworld reported that McDonald's rejected a contract that invoked Maryland's UCITA law.

Worse, UCITA holds a customer's data hostage. Reverse-engineering is required for interoperability, but unless a software vendor graciously provides proper export mechanisms, customers could be stuck printing and rekeying all data. This lock-in isn't lost on the vendor, which would have

even less incentive to make a good product.

Steve Litt
Longwood, Fla.

ALTHOUGH I wasn't in the mood for Alex Torralbas' sophomoric humor, I take his points that smaller software companies are at a significant negotiating disadvantage over large, brand-name software companies when it comes to license agreements and that UCITA was intended to level the playing field. What I take issue with is that most software is sold as a product, when what I want is a service. License agreements typically reflect this "product" mentality of the developer, so right away the customer and vendor get off on the wrong foot.

Software vendors' product-centric attitude is why, when it came to building a Web-based e-commerce exchange for our clients, we failed at finding a vendor that was willing to provide the service we needed, based on the products for sale. We therefore spent some $5 million going to a "work-for-hire" software shop, and to

say ourselves provide the services our clients require, using software that we own outright.

When vendors are more concerned about how their customers see their software to provide services to others, we won't need UCITA; licensing agreements will be but one small section in a services contract between the customer and the service provider. Gee, sounds like IBM, doesn't it? Or is that too sophomoric a note on which to end?

Robert Wise
Senior vice president and CIO
Argent Trading LLC
New York

Mixed Messages

I FOUND IT IRONIC that a Page One story on March 4 bemoans the dearth of experienced mainframe IT workers ["Mainframe Skills Pay at a Premium"] while the Career Adviser column in the same issue counsels a seasoned mainframer that the market will continue to wither. Now, moreover, the mainframer is advised to "upgrade your skills, your understanding of the business and possibly

even your appearance." This generic and consistently condescending advice seems appropriate for all employed individuals, in IT or not. Perhaps the Career Adviser should note (again, from Page One) that mainframe shipments are on the rise; that in one Canadian organization, mainframe experts command a hot skills premium; and that in California, a company is using part of its training budget to bring younger workers up to speed on mainframe technologies.

Hunter Cobb
Trainer
Hunter's Training Associates LLC
Denver

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BUSINESS

JOE AUER/DRIVING THE DEAL

The Right Attitude

ONE OF THE MORE IMPORTANT ISSUES when I advise IT buyers is their basic attitude toward contract negotiations. In many situations, the end user or senior management has a friendly, close relationship with representatives of the vendor. The vendor is referred to as their partner, friend or the one with the solution to their problem. As a result, these stakeholders, who must protect their company's interests, can be less than objective in analyzing the vendor's proposals, promises and provisions.

Whenever I brief the key players on the customer's negotiating team, I use the following "attitude adjustment" points, which are useful for all of us:

■ Negotiations begin when the first person in your organization exchanges information with the vendor. You gain or lose negotiating power with every succeeding interaction.

■ The customer is the buyer, and the vendor is only the *potential* supplier. You've got what all the vendors want — the money.

■ Change your "needs" to "preferences." Needs aren't negotiable; preferences are. Don't tell a vendor you *need* it, its product or its service. Just say you *prefer* it.

■ At negotiation time, the vendor's sales representative has expected to his management that the deal with the customer has already been sold. Use this to your advantage, since the sales rep has placed the pressure on himself to close the deal.

■ Vendor reps face many pressures to reach certain sales goals at various times, such as quarterly, annually or when earnings are down. Be aware of these pressures.

■ Vendors will try to exploit almost any sense of urgency. Remember that haste makes waste, unless your side is the better prepared, has alternatives and sets a deadline that's to your advantage.

■ Generally, it's to the customer's advantage when vendors bring in their top brass, as long as the customer is unimpressed with warm-and-fuzzy talk about relationships and places on the agenda substantive negotiation points to address with the vendor's executives. They have more to give away than the sales reps do.

■ Never rely on vendor promises and benefits unless they're written in the contract, and hold the customer personnel who trust those promises accountable.

■ Vendor shareholders and senior management are primarily interested in bottom-line profits and allocating risks to the customer, not interpersonal relationships. Don't rely on these relationships; vendors just use them to get what they really want.

■ Multiple acquisition methods (leasing vs. purchasing, short- vs. long-term contracts) should be considered in most cases, though vendors will try to give you tunnel vision that benefits their current performance objectives.

■ The customer does have alternative vendors, approaches and deal timing, and both sides should be aware of that during negotiations.

■ Vendors must be aware that negotiations will end only when the customer is fully satisfied and the agreement is fully documented.

■ Ignore a vendor's claims, especially early in negotiations, of "That's the best deal we can give you."

■ If you haven't heard a no from the vendor or haven't experienced a deadlock, impasse or some sort of breakdown in negotiations because you asked for too much, you haven't gotten the best deal you can get.

■ Remember that negotiations are enhanced by thorough planning, knowledge, teamwork and dedication to securing the best contract protections at the best price.

■ Most important, remember that competition is your strongest ally. Don't select a vendor until you've gone through competitive negotiations on everything, including the contract, with at least two potential vendors.

You and the rest of your negotiating team should keep these points in mind and review them like you would review a checklist before each negotiation. After all, other professionals, like pilots who have been flying for 20 years, still review their checklists before takeoff. ■

IT PROFESSIONALS face a major headache when it comes to procuring and implementing software: Should they go with the big-footprint vendors or the best-of-breed niche players? It really depends on each company's individual needs.

For some businesses, the question boils down to whether world-class functionality is really required.

"Companies that need to have a single view of customers across business units and products, and the ability to understand customers' needs, and to react to them in real-time might require a more specialized CRM implementation, like Siebel," says Steve Berez, vice president of IT and e-business at Bain & Co., a Boston-based management consultancy.

But if those requirements aren't key drivers, says Berez, "then they may be perfectly fine with Oracle, even though that solution is less robust."

Vendors, it seems, tend to claim ever-greater expertise in their market's products, exacerbating the IT manager's age-old dilemma of whether to procure best-of-breed or integrated technologies. As all-in-one software providers, like SAP AG, broaden the scope of their offerings, they run into best-of-breed competitors, and the race to win customers is on.

While best-of-breed software vendors concentrate on providing the latest specialty products, enterprise providers claim convenient, modular integration capabilities, fewer errors in data translation and lower licensing, implementation and maintenance costs.

Best-of-breed vendors fight to retain their application leadership positions by developing vertical domain expertise and functionality. Though some customers will continue to require highly specialized applications, the gap-narrowing efforts by the integrated suppliers tend to satisfy the needs of most users, customers and analysts say.

SOFTWARE SELECTION

Closing the Gap

Brian Zrimsek, an analyst at Stamford, Conn.-based Gartner Inc., terms the interplay between best-of-breed and integrated suppliers "the cycle of assimilation," because he anticipates that broad software vendors are likely to catch up with the specialists since functionality has become a commodity and the business requirements are in the public domain.

"I come down on the side of integrated solutions as opposed to best-of-breed, as long as there is functional parity," he says. "There are fewer vendors to deal with and only one support desk."

For instance, in the customer relationship management (CRM) space, Zrimsek says, he believes that some of the broader software vendors, such as SAP, PeopleSoft Inc. and Oracle Corp., are achieving parity in sales force automation.

"In supply chain, ERP vendors are behind best-of-breed vendors in areas like transportation management and warehouse management but are getting closer in demand planning and constraint-based planning," he notes.

Two years ago, "enterprise vendors weren't moving along with supply chain applications or CRM," says Pete Janak, CIO of Delphi Automotive Systems Corp. in Troy, Mich. "So you'd see companies deploy-

Striking a BALANCE

As enterprise software vendors push greater functionality, integration capabilities and lower support costs, the line between **best-of-breed** and **all-in-one** systems begins to blur.
By Peter Buxbaum

**IN TIMES LIKE THESE, YOU NEED
E-BUSINESS SOLUTIONS THAT WILL HELP
YOU SURVIVE TIMES LIKE THESE.**

Today, the best-run e-businesses know that to achieve real ROI, you need more than ad hoc
approaches and stand-alone solutions. You need a new way to make everything work together.
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> If [single-source] flat-out doesn't provide the functionality that is needed in a particular area, you need to go best-of-breed.
>
> PETE JARAE, CIO, DELPHI AUTOMOTIVE SYSTEMS

ing SAP as an application platform with i2 [Technologies Inc. software] on top of it for supply chain management and Siebel for CRM. But then SAP came along with good supply chain and CRM solutions, so SAP customers began moving to SAP for those applications as well.

Customers that choose single-source systems should demand and receive better pricing than their best-of-breed counterparts, says Bruce Bllsch, CIO at Tessenderlo Kerley Inc. (TKI), a Phoenix-based chemical company. TKI demonstrates that you don't have to be a huge company to exercise that leverage.

TKI is a wholly owned subsidiary of Tessenderlo Group, a Belgian corporation with total revenue last year of $1.99 billion. The revenue generated by production in the U.S. — almost all of which can be attributed to TKI — accounts for just 11% of that total, or approximately $175 million.

Even though it's not a big player, TKI received the royal treatment from Cisco Systems Inc. when it decided to single-source its WAN/LAN from that vendor.

"Cisco responded with national account service and pricing," says Bllsch. "They directly attributed their unusual response to our desire to make the total commitment to their product line."

And TKI didn't land those favors like other companies that have taken advantage of the 40% to 50% discounts many vendors have been offering during the current economic slump. The company went live on SAP across the Cisco WAN in early 1999, long before the economy took a dive.

Despite all of these advantages, even single-source aficionados go with best-of-breed applications occasionally. "If it flat-out doesn't provide the functionality that is needed in a particular area, you need to go best-of-breed," says Jarah.

And companies continue to need top-of-the-line functionality for operations that provide a competitive or strategic edge, according to Borst.

"For many firms, having the best warehouse management functionality is not a strategic requirement," he says. "For logistics providers, it is core to their business, and if they cannot provide a full range of options, it will put them at a competitive disadvantage." ●

Buxbaum is a freelance writer in Elizabeth, N.J. Contact him at pab001@aol.com

Bevcore Takes a Big Gulp

"Having been through the best-of-breed approach, we saw that it can be very costly and take a long time," says David Womeldorf, vice president for technical operations at Mell Bevcore Solutions Inc., an Ossoc, Minn.-based supplier of spare parts for beverage machines.

The challenges he faced in that project taught Womeldorf to whistle a different tune. The company now relies on PeopleSoft for almost all of its enterprise systems as well as the hosting and consulting activities associated with them.

The two biggest hurdles to the best-of-breed approach are single-user sign-on for managing suite and session and the integration at a systems-interface level," says Womeldorf. "It is also difficult to control the scope of best-of-breed projects, because you are dependent on multiple consulting firms with expertise in specific technologies."

From a cost-effective

standpoint, Womeldorf says, he believes that single-sourcing also has a slight edge because it enables the vendor to bundle modules together. "But the real cost savings are in the reduced skills set required to support the applications and to develop the required customizations," he says.

Womeldorf acknowledges that there's an initial trade-off between implementing enterprise software and meeting the business needs of the company. But, he warns, "quick and dirty customizations to speed implementation can come back to bite you later."

Instead, Bevcore customized its People-Soft supply chain, CRM, financial and human resources applications after the installation.

"We did it from the user perspective," Womeldorf says. "It's best to get it up and running before making up your mind about how to customize. There is a tremendous advantage to that approach."

— Peter Buxbaum

Ryder Takes the Specialty Route

As a third-party logistics provider, Miami-based Ryder Systems Inc. often, a varied menu of services to its customers, from planning to trucking to warehousing, and all of them are powered by IT.

Given the nature of the company's business, there's no substitute for a best-of-breed approach, according to Kevin Bott, Ryder's vice president for product and technology management.

"We don't have a vendor that can meet all of our needs," says Bott. "There is no A-to-Z solution. Each provider has a sweet spot that they work in."

Ryder uses i2 Technologies for transportation management, Qualcomm Corp. for mobile communications, Yantra Technologies for on-board computing and Manhattan Associates Inc. and EXE Technologies Inc. for warehouse management. The company recently signed a deal with SeeBeyond

Technology Corp. for enterprise application integration.

"We conduct due diligence to make sure the vendor's strategy lines up with ours long term," says Bott. "We make sure we are dealing with significant players in order to keep as up-to-date as possible."

While companies that go the single-source route tout the volume leverage they can assert over their vendors, $5.5 billion Ryder is capable of influencing its own myriad vendors. "We maintain strong relationships to get what we need," says Bott. "If we need a major enhancement for one of our customers, we get the developer to incorporate its development plans."

At the same time, Ryder relies solely on IBM for back-office and manage its infrastructure and hires on Accenture as its prime source for IT labor. Even with that, however, Ryder will look outside the relationship when it's warranted.

— Peter Buxbaum

Expect two years of headaches, but the rewards can be worth it. By Matt Hamblen

T HANKS TO THE RECESSION and the resulting push to contain costs, ROI has become a big buzzword in IT. Yet few companies are tracking ROI in a consistent and standard manner, says Karim Isfahani, an analyst at The Robert Frances Group in Westport, Conn.

Two companies that have embraced standard ROI measurements — Merrill Lynch & Co. and Compaq Computer Corp. — began implementing their own standard IT planning processes more than two years ago. In both cases, managers had a hard time setting up the methodology, because the IT process was time-consuming and highly political. But the result for both organizations has already been worthwhile in terms of financial payoffs and in raising the strategic value of IT within the companies, managers report.

About 23% of U.S. companies require a detailed ROI analysis to justify investments in all IT projects, according to a December 2001 survey of 1,200 businesses conducted by Marcoccio Consulting in Westboro, Mass. That's up from just 9% in March 2001, an increase that leads consultant Lou Marcoccio to predict that by the end of this year, 65% of companies will require a detailed ROI analysis to justify IT projects because of pressure from top management, executive boards and shareholders.

"ROI is going to be much bigger going forward. . . . It has to be much more than a fire drill to make a difference," says Marcoccio, author of a book on best practices for ROI measures that will be released this summer.

"Most organizations don't have expertise in the whole concept of ROI, partly because in the past, IT leaders

IN SEARCH OF ROI MEASUREMENTS

BUSINESSROI

haven't been the best business leaders," he adds.

Compaq and New York-based Merrill Lynch both have ROI evaluations at the core of their IT project planning processes, having overcome many bureaucratic and philosophical obstacles to get there, including getting business and IT employees to meet and talk with one another regularly.

"This process has clearly removed our technology spending on what I'd call nonstrategic investments and redirected spending to more strategic areas," says Marvin Balliet, chief financial officer for the technology group at Merrill Lynch. The financial services company now has business people who will use the technology involved in budgeting and planning for IT.

At Compaq, "IT is targeted more to where the company needs it," says John Buda, vice president of strategy, planning and program management. As a result, "IT dollars are much better spent," he explains.

At both companies, ROI measurement is only part of a much bigger planning, communication and prioritization process. One key difference between the two companies' approaches to measuring ROI is that Merrill Lynch requires a 15% cash return on equity investment within five years for a project. At Compaq, a project's ROI status must be examined after a year, but no set payback level is required.

Even a generous positive return doesn't guarantee that a project will go forward at Compaq. That's especially true if it involves a piece of hardware or software that veers away from the company's technology blueprint and infrastructure.

For example, the use of business-to-business tools for e-commerce by Compaq workers in Asia should conform to the business-to-business tools platform the company uses elsewhere in the world, officials say.

"Setting an ROI return level at a certain amount might mean people don't bring good ideas forward," says Compaq's Kelly Dayan, manager of business opportunities for IT.

Bullish on ROI

For the past three years, Merrill Lynch has required a risk-and-payback analysis for every technology initiative that costs more than $2.5 million. The process is similar to how Merrill Lynch would measure a capital investment in real estate, for example.

This year, there will be 50 to 100 IT projects evaluated, quite a bit fewer

than the 230 the brokerage reviewed in 2000, given the restraints of the recessionary economy.

Merrill Lynch launched its ROI methodology three years ago. Before then, every technology purchasing decision was made by technologists. Now, other than technology infrastructure investments, all IT decisions are "made by business people, with technology people sitting next to them," Balliet says.

Standing review committees in each of Merrill Lynch's business units are made up of managers from the business, finance and technology departments who meet monthly and assign low, medium or high probabilities to the expected benefits of a project.

When Balliet started the process in late 1998, there were seven review standards, or templates, that management or Merrill Lynch used to evaluate projects, each one favoring its own business area. Now a single, standard six-page template is used that poses yes-or-no questions to evaluate project success factors.

The document is coupled with a detailed five-page financial report. Questions asked include, "Is the success of this project dependent on another business or technology unit?" and "Have the business functions and the data requirements been identified and agreed to with the business units?"

"The business person and the technology person sit down together, and

it's an agreement between the two sides before we start to spend," says Balliet. "The only rule to this is that the process has to be assigned to the business people; it cannot be assigned to the technology people."

At Compaq, a similar combination of business and IT leaders has helped guide internal IT decisions for the past two years, as the company has integrated the management methods and technologies of Tandem Computer Systems Inc. and Digital Equipment Corp., which it acquired in the late 1990s.

Each of Compaq's eight business units has a vice president of IT. They form the core of the CIO's staff. This arrangement began when Compaq's former CIO, Michael Capellas, moved to the position of CEO in July 1999, helping give life to the new method.

Worth the Effort

There are 1,134 internal IT projects being reviewed at Compaq, and no project can remain on the list for more than a year. Compaq uses a project-management system called Team-Play from Primavera Systems Inc. in Bala Cynwyd, Pa., to help managers use consistent tools to monitor projects in other continents.

Projects valued at more than $500,000 get extra scrutiny from a system review board at Compaq that includes the CIO, CFO and executive vice presidents of sales and service

and product development.

The process was "a little painful" during the time Compaq was in the midst of absorbing Tandem and Digital, since there were cultural changes that were a big challenge, says Don Kimberry, director of worldwide program management. "Getting everybody to contribute to a standard system was a challenge, but it has had a great payback," he says.

Compaq executives believe that the biggest achievement from its ROI methodology has been the alignment of its proposed IT projects with its global blueprint for IT. And Merrill Lynch has seen a similar alignment, as well as a drastic reduction in the number of projects with cost overruns.

Neither company would describe specific cost savings. However, both Marcoccio and Isfahani say the savings probably amount to millions of dollars annually for each company.

Before Merrill Lynch launched its ROI program, about half of its projects ran above cost and never delivered all the promised benefits, Balliet says. Now the number of individual projects that exceed costs is down to 10%. In fact, the process works so well that when there is an overrun, "the managers have to find other places in the budget to pay for the overrun than the technology line," he says.

"We've made it painful for the business people who don't engage in the process," Balliet adds. ▶

Setting Up an ROI Methodology

Create an ROI program that's headed by an official in the CFO's office who becomes the **ROI guru**.

In addition to calculating ROI, the ROI guru should serve as an **evangelist** throughout the company, promoting ROI and how to implement it.

The ROI guru should hold **weekly or biweekly meetings** with business and IT players to create a standard method for ROI measures. After three months, they should develop a **template of measures** to be used for future IT projects.

The ROI guru must get the CFO and CIO to **buy into the strategy** that the business and IT players have developed.

Create a **"life cycle cost of ownership"** method for measuring IT projects. During the implementation phase, the ROI guru can derive data on full life cycle costs for each IT function. These should then be measured for each new project.

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Federal IT workers are retiring in droves – and there are too few replacements in sight. By Gary H. Anthes

UNCLE SAM'S BRAIN DRAIN

STRUGGLING TO FIND top-notch IT workers? Perplexed about where to find the funding to pay those six-figure salaries for IT specialists? Cheer up — it could be worse.

You could have Joyce France's job. France is the division chief for IT workforce management in the CIO's office at the U.S. Department of Defense (DOD), which employs 161,000 IT professionals. More than one-third of the 75,000 civilian IT workers at the DOD are over 50 years old, and many are eligible to retire now. "Thirty-six percent are at the door," is the way France puts it.

For France, the challenge of hiring tens of thousands of IT workers over the next few years isn't simply a numbers game. Certain specialties are in critically short supply. For example, during the past few years, information security specialists have been avidly sought by federal agencies whose systems have been repeatedly attacked.

And after Sept. 11, the demand for security skills soared still higher. "The needs are greater for security people now," France says. "We lost a lot of people at the Pentagon, and we need to get people in quickly."

The imminent shortage of IT professionals is by no means limited to the Defense Department. Federal employees can retire at age 55, and 29% of all government IT workers are now over the age of 50, says Fred Thompson, an assistant director in the CIO's office at the U.S. Department of the Treasury.

Replacing those workers will be difficult, according to the National Academy of Public Administration (NAPA) in Washington. NAPA estimates that the government will need to hire 45,000 IT workers in the next 10 years.

Although innovative approaches to recruiting, hiring and retention have been under way in pockets of the gov-

ernment for some time, effective practices have been slow to catch on across all agencies.

In an August report titled "The Transforming Power of IT: Making the Federal Government an Employer of Choice for IT Employees," NAPA said, "There is a crisis looming that if unresolved will imperil the ability of federal agencies to carry out their missions. In a matter of years, the federal government is in danger of having a significant shortfall in its workforce of IT professionals who can develop, implement and manage IT systems and provide expert policy and procurement guidance."

In the report, NAPA identified the following problems:

- **Skills shortage:** There's a significant shortage of IT professionals nationwide, and the situation isn't expected to improve for at least 20 years.
- **Aging workforce:** More than half of federal IT employees will be eligible to retire within the next 10 years.
- **Pay gap with the private sector:** At the mid- and senior management levels, there isn't a single position in

which government salaries meet industry averages, with most positions falling significantly lower.

- **A broken recruitment system:** Delays that can last for months mean well-qualified candidates accept other jobs before the government can make an offer.
- **Compensation policies aren't attractive to private-sector IT professionals:** The federal personnel system rewards workers for longevity of service, while most IT professionals prefer compensation based on performance.
- **Too little investment in continual learning:** This failure is especially problematic in the rapidly changing world of IT.

NAPA made 10 recommendations for helping federal agencies retain and recruit IT workers, including pegging IT pay to market rates; streamlining hiring processes; rewarding workers more for performance; and giving managers more flexibility in hiring, promoting and compensating employees. Federal agencies are taking some steps to deal with widespread IT retention and recruitment problems. In

January 2001, the U.S. Office of Personnel Management (OPM) increased pay raises from 7% to 33% for 33,000 lower-level IT workers.

In June, the OPM created 10 categories of IT jobs — such as security, data management and system analysis — to replace the catchall "computer specialist" job classification, and it created evaluation criteria for each job description. It did not, however, vary pay or benefits by category to match private-sector rates.

The OPM also created IT qualification standards that consider skills and competence in addition to education and experience. The standards are being piloted at 11 agencies.

Not Enough

Although all of these actions are positive steps, none of them goes far enough, says Thompson at the Treasury Department, where 12% of the agency's 7,000 IT workers will become eligible for retirement this year.

"We worked with OPM to create those 10 subcategories, but we still pay all of those people the same based on skill levels and supervisory responsibilities," he says. "Until we get to the next step and tie the specialties to what they are making in the private sector, we won't have solved the problem."

In the meantime, some Treasury Department bureaus are experimenting with options permitted under current regulations. The U.S. Bureau of Alcohol, Tobacco and Firearms is participating in a demonstration project for enforcement agencies that allows incentive pay, certification bonuses, and retention and recruitment bonuses.

And the office of Treasury Inspector General for Tax Administration is paying retention bonuses to 22% of its IT workers with certain critical skills. "If you think your employee is about to go to private industry, you can offer them a retention allowance," says Dagne Fulcher, program manager for IT Workforce Improvement at the Treasury Department's CIO's office. Those bonuses are paid continuously and range up to 25% of base pay.

The DOD has stepped up its use of recruitment and retention bonuses, offering $50 in the past 12 months, compared with 30 three years ago, France says. "But it's still not up to where I'd like it to be because of the culture and mind-set," she says.

Indeed, the bureaucratic mind-set stands in the way of a great deal of improvement in the hiring, retention and motivation of federal IT workers, says Costis Toregas, president of Public

> There is a crisis looming that if unresolved will imperil the ability of federal agencies to carry out their missions. In a matter of years, the federal government is in danger of having a significant shortfall in its workforce of IT professionals who can develop, implement and manage IT systems and provide expert policy and procurement guidance.
>
> **NAPA REPORT, AUGUST 2001**

Technology Inc., a Washington-based nonprofit organization that promotes the use of technology in city and county governments. Toregas chaired the NAPA panel that wrote the report on federal IT workers.

"We found, much to our surprise, that some 80% of our recommendations could be covered under existing legislative authority," Toregas says. He says numerous trials of the ideas set forth by NAPA have been under way, some for years, without spreading to other parts of government.

Nevertheless, there have been some successes. The U.S. Department of State and the Internal Revenue Service pioneered IT job fairs two years ago. Now, the first governmentwide job fair is being organized by an interagency group. It will be held in mid- to late April as a virtual event, where job applicants inside and outside the government can visit the fair's Web site, learn of IT job openings and the qualifications needed for them and then apply online. Job offers can follow in days, not months.

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BUSINESSCAREERS

66 Dear Career Adviser:

I have a degree in computer science and four years' experience with Java, C++ and HTML. I have worked in two software start-ups that no longer exist. My goal is to become the chief architect of an e-commerce software development effort.
— SMALL FISH TO BIG POND

Dear Pond:

Growing your career into a chief architect's role encompasses three primary areas, notes Kim Poindexter, vice president of software development at FileNet Corp. in Costa Mesa, Calif., a company specializing in enterprise content management for e-business.

First, this role requires a broad understanding of e-commerce and current Internet technologies. Second, you must understand the standards deployed in your field and the

rationale behind your choices, as well as behind the choices made by your company's competitors. Lastly, you must grasp the business problem you are solving and understand how your development efforts are key to the solution.

Grooming yourself for a chief architect's spot requires getting yourself into a larger, more stable company, advises Poindexter. You need to select a place where you can spend at least a year to 18 months working on a project — from concept through delivery and

deployment — that solves a complex, real-world problem. You must be at the company long enough to work through the long-term, sustaining issues of your development effort.

In interviews, companies are more apt to want to groom you for a chief architect's role if you show insight regarding

the technical problems you've solved and why you selected a particular way of solving a problem from an architectural point of view.

66 Dear Career Adviser:

I will get out of the Air Force fairly soon and have been working in a network management shop for the past three years. I have some skills in LANs, WANs, Cisco routers and switches, firewall administration and antivirus software. I
have thought about becoming a disaster recovery expert and want to investigate this field as a possible career strategy.
— WISCONSIN WINGS

Dear Wings:

Your networking skills are only part of a major company's total IT

disaster recovery plan, notes Roseann McSorley, director of business continuity management for the Americas at Deutsche Banc in New York, which relocated four downtown facilities to an alternate New Jersey site after the terrorist attacks on Sept. 11.

Disaster recovery planning requires having a detailed multisite recovery strategy in place. However, even after Sept. 11, companies aren't adding disaster recovery jobs, per se. Instead, disaster recovery teams typically have one person on the command officer formalizing a company's disaster recovery strategy, with team members usually integrated, or "matrixed," into the total organization.

In fact, notes McSorley, you're most likely to become a key part of a disaster recovery effort if you have a background in or are working in large-scale enterprise application development with disaster recovery responsibilities tacked on to your regular IT duties. ▶

WORKSTYLES

High Performance Rules At International Truck

Rick Herbst, manager of Project Office Integration at International Truck and Engine Corp., discusses the emphasis on performance and accountability in his shop.

What are the most critical tasks assigned or developed by your department on a daily basis? "Within my department [which has eight employees], we support global project management and Bean administration. Supporting the Bean package is the most critical thing going on in any own area. If the systems are down, potentially the plants can be shut down."

What do you think makes your company's IT department

unique? "In 1997, our president and CEO, John Horne, was very committed to changing our culture to a high-performance culture. Some people perceived it as, 'Here we go again.' But he was committed to rolling it out to the entire organization, from upper management down to the union. And it's still active today. In fact, our most recent hire came on nine months ago, and he just went through a three-day training, culture and team-building workshop. So it's still alive and well.

"The culture is based on core values: Respect for people, accountability, pursuit of quality, customer focus and

innovation, speed, simplicity and agility. All those things are common sense, but by going through it with everyone, we developed a common language and framework that allows us to talk openly and freely. For instance, it's OK to challenge something if you do so respectfully."

What is an example of how you live out these core values? "One example in the Bean

administration world is when we have to go through the process of implementing customizations to the application. It can be a very manually intensive process to roll our that software to all the different environments. So the team got together and developed some tools to get the package turnover through the group, as well as some scripts that let them roll it out to other environments.

... Now, people can go home

and spend time with their families, and if there's a problem, they will be automatically notified."

How would you describe your company's overall culture of IT? "It's casual across the board. The company is also very much aware of the balance of work and family life and supports flexible work hours and telecommuting."

What aspect of work do you look forward to each day? "The sense of accomplishment of delivering a quality product."

What aspect do you dread each day? "If we've got a problem that's affecting a customer, like if the system is down, that's what I dread — impacting the productivity and performance of our customer."

— *Mary Brandel*
thebrandels@hotmail.com

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TECHNOLOGY

NICHOLAS PETRELEY

Secrecy Is an Illusion

PHIL ZIMMERMANN says he doesn't regret creating the Pretty Good Privacy (PGP) strong encryption program, even though terrorists may use it. But while encryption may protect our Internet transactions and routine communications, it would be naive to think that governments or even wealthy companies and individuals can't get around it.

I happen to believe that if our investigative agencies can't crack PGP by now, someone isn't doing his job. But even if PGP has some life left,

a couple of recent articles exposed how easy it is to spy on someone. One of the stories discussed a technology that decodes the flashing lights on a modem; the other is about finding out what's on a user's screen from the reflection of a monitor's glow on the user's face.

These technologies aren't really as cutting-edge as they sound, but they have Hollywood written all over them. No doubt the next *Mission: Impossible* sequel will have Tom Cruise run a video of a suspected terrorist through a computer that transforms the glow on the terrorist's face into a flawless picture of what appeared on his computer's monitor.

By the way, a recent story in *Computerworld* [Future Watch, March 11] described smart mines that wake up and hop over to fill in the gaps after an enemy clears a path through a minefield. I can't wait to see Cruise in a chase scene running away from a hopping explosive.

If there is any lesson to be learned from the stories about spy technology, it's that secrecy is an illusion. And here's a nonsecret for you: It has been that way for a long time. Interpreting the lights on a modem in child's play. It's almost as easy to read the radio emissions from a computer monitor to reconstruct what the person sees on the screen. It's not nearly as easy to reconstruct a monitor's contents from the glow on a person's face because facial contours complicate the process.

But aside from that, it's a reasonably straightforward procedure because we know how monitors work.

Believe it or not, you can do even more sophisticated snooping without having to know why a particular technique works. The trick is to combine digital signal processing with statistics-based pattern recognition. For example, suppose you want to be able to determine what someone is typing simply by pointing a directional micro-

phone at a wall outside that person's office.

It's easy. You record the clicks of the keyboard as the person types and digitize the sounds. Run the data through various analytical routines, such as a fast Fourier transform or a program that detects the envelope of each click. Then put this data through a statistical engine to see which approach best distinguishes one key from another. You don't need to know why one method is better, just the fact that it's better.

Once you choose the best way to interpret the pattern, all you need to do is map the distinctive digital signatures of each key to actual letters and characters. This part is no more difficult than solving a cryptogram. After that, you can turn on the microphone, and your snooping device will display in real time exactly what the person types.

I'm not sure when the foundation for spying via digital signal processing was laid, but I know it was well under way by the early '80s when I learned about the keyboard trick. These days, it's probably easier to sneak a keystroke-recording program onto a computer, and there are always fewer esoteric approaches, such as wiretaps, hidden cameras and long-range cameras. But as you can imagine, signal processing opens many possibilities. The keyboard example is actually a trivial problem compared with what people were doing with digital signatures even back in the '80s.

I'd like to think that by now we could bounce a rock off a cave entrance in Afghanistan and tell from the sound whether or not Osama bin Laden is in the cave, if he's wearing underwear, the color of said undergarment and how long it's been since he washed it. That may be a stretch, but if you start hearing people bounce pebbles off your window, I'd recommend you be careful about your hygiene and what you wear. ◗

Overview: Visual Studio .Net

The recent launch of Visual Studio .Net and .Net Framework won anticipants for some developers who had already deployed applications and Web services based on these technologies. As the early adopters now reflect on their experiences, there is remarkable consensus about the value of what Microsoft Corp. has achieved and the obstacles that still lie ahead.

By Jon Udell

Foundations of The .Net Platform

TECH CHECK The primary development tool for .Net, Visual Studio .Net, is still only the tip of a very large iceberg. There's a massive infrastructure below the waterline, years and billions of dollars in the making, encompassing many development and deployment tools and technologies.

It's no small feat to develop a tool that encompasses such a bewildering array of technologies. Visual Studio .Net at its best not only does so, it also manages to unify and simplify.

The marquee feature of Visual Studio .Net is its deep and elegant support for both producing and consuming Web services. In an Active Server Pages .Net application, a few annotations — [Web-Service] or [WebMethod] — suffice to expose a

class and its methods as Simple Object Access Protocol (SOAP)-callable services.

Because Visual Studio .Net also generates the Web Services Description Language (WSDL) file that describes the service, users from Visual Studio .Net or from any other SOAP-aware programming environments can more easily discover how to use the service. In Visual Studio .Net itself, that discovery process is almost miraculous.

A C# or Visual Basic .Net programmer who needs a service adds its WSDL file to the Visual Studio .Net project and can then use the Intelli-Sense feature to reveal the names of its exported services, and the names and types of the methods and their arguments. As a result, services become self-documenting to an extraordinary degree.

To the extent that software, from now on, will increasingly take the form of federations of loosely -coupled services, this capability — which makes ad hoc collaboration almost frictionless — deserves the hype it has attracted.

Fewer Plumbers

FIELD NOTES For Jon Rauschenberger, director of technology at Chicago-based Clarity Consulting Inc., ASP .Net's improved debugging is a major win, as is its new programming model, which transmutes HTML widgets into server-based, event-driven objects. "The best object-orientation that pervades .Net was a breath of fresh air for Rauschenberger and his team. "We could do objects in [Visual Basic]," he says, "but without true inheritance, we were hamstrung.

He says the ability for developers to inherit from their own components, from other developers' components and from .Net Framework itself is a huge benefit. For example, Rauschenberger notes that although interoperability of Web services across vendor implementations isn't yet perfectly smooth, the extensibility of Framework makes it possible to handle such problems. "If we don't like how some implementation serializes a SOAP request, we

can reintercept the processing, jump in and make it work," he says.

Faster Development

For Rodolfo Soto, vice president of operations at Articles Technology in San Jose, Costa Rica, Visual Studio .Net's highlights include the following:

■ The Server Explorer, which manages operating system resources within the Visual Studio .Net environment.

■ Stored-procedure debugging, which makes it possible to step through SQL Server stored procedures, just like with C# or Visual Basic .Net methods.

■ ASP .Net, which, he says, delivers "Web rapid application development like nothing we've seen before, with seriously important caching and tracing features."

Articles was recently contracted to provide real-time presidential election results to Costa Rica's largest TV station. The interchangeability of .Net languages helped Articles finish the two-week project on

time. "The ability to use our languages of choice in an integrated environment saved us three full days," Soto says.

Powerful Prototyping

Although it's possible to dive into the plumbing, Visual Studio .Net and .Net Framework conspire to make that rarely necessary. Together, they raise the development of applications, components and services to a high level of abstraction. One outcome is the re-empowerment of managers and software architects who formerly had to delegate programming to specialists. Howard Kezsbom, chief technology officer at Impact Technologies Group Inc. in Charlotte, N.C., says he thinks of himself primarily as a prototyper and designer. Using Visual Studio .Net, he has found that he can communicate ideas to his teams as working software. "With VB, I could demonstrate user interfaces, but .Net is so rich in classes that I can prototype just about anything," he says.

SOTO: .Net "saved us three full days."

Early Adopter Like Visual St

TECHNOLOGY FIELD REPORT

well, both within and across SOAP implementations. Services that produce complex types fare less well, mainly because the paint is still drying on WSDL's type-definition interfaces. These more complex services can and do interoperate, but it takes more work.

"You have to think about who is consuming your Web service," says Jon Rauschenberger, director of technology at Clarity Consulting Inc. in Chicago. As a result, the capability is most useful today for integration behind the firewall.

Rodolfo Soto, vice president of operations at Arboles Technology in San Jose, Costa Rica, agrees. "Web services are very valuable for enterprise application integration, but the commercial business rationale is still unclear," he says. ▶

Udell (http://udell.roninhouse.com) is a consultant and writer in Keene, N.H., and the author of Practical Internet Groupware *(O'Reilly, 2000).*

The WSDL protocol on which IntelliSense depends is, admittedly, still a bit rough around the edges. Services that produce and consume simple strings and numbers tend to interoperate pretty

VISUAL STUDIO .NET PRODUCING AND CONSUMING WEB SERVICES

1. Create a Web reference for the path of a WSDL file at 4x4c.com.

2. Create an instance of the service.

3. Type a period after the variable's name.

4. Select a method; IntelliSense reveals its return type and the types of its parameters.

5. IntelliSense reveals its methods and properties.

What's Not To Like About Visual Studio?

PROBLEM AREAS Early adopters want the Visual Studio .Net learning curve is steep. That's true for a number of reasons. Visual Basic 6 developers encounter language shock when confronted with the very different Visual Basic .Net. Then there's the challenge of mastering the class-rich .Net Framework. While comparable to learning any large object-oriented system – say, SmallTalk or Java – Clarity Consulting Inc.'s director of technology, Jon Rauschenberger, points out that "companies who committed to the Microsoft platform weren't expecting this." He adds that Visual Studio .Net itself is plainly a 1.0 product and cites issues like sluggishness, the loss of edit-and-continue capability and "lack of robustness in the immediate window."

There's some concern that things that Visual Studio .Net makes extremely easy for programmers will, in turn, make life harder for system and database administrators. Arboles Technology's vice president of operations, Rodolfo Soto, for example, cites complaints from database administrators that Active Data Object (ADO) .Net's ability to create and exchange disconnected data sets will weaken their ability to enforce constraints and relationships. Rauschenberger notes that ADO .Net's server-side events, if used indiscriminately, can produce excessively chatty (and thus bandwidth-hungry) applications. But nobody sees these issues as showstoppers.

Although some early adopters have deployed systems on the .Net platform, most business will move more slowly. The new platform assists gradual migration in two basic ways.

First, although .Net doesn't use the Component Object (COM) technology that has been the mainstay of Microsoft's component strategy, it interoperates smoothly with it. The .Net Framework can use existing COM components. And, what's more, native .Net components – which are much simpler to create and deploy than COM components – can plug into legacy COM-oriented services like the COM+ transaction manager.

Second, the pervasive support for Web services delivers another rich set of integration points with pre-.Net software. So if it ain't broke, don't fix it. But when you start something new, these experts say, think about doing it the .Net way.

QuickLink For additional .Net development information, including Web services using BizTalk Server, go to Computerworld's Web site at www.computerworld.com/q497/net

IT ROLLS OUT WIRELESS LANs Despite Insecurity

D ESPITE WIDESPREAD CONCERNS about the security of wireless LAN (WLAN) deployments, some IT managers are forging ahead with Wi-Fi technology to increase worker mobility in a variety of commercial settings and to avoid expensive installations of wires.

Months of negative publicity about the weaknesses of Wi-Fi, or 802.11b, have sharpened the security scrutiny on the part of several IT managers who already had deployments of 802.11b-based networks under way, they report.

Instead of ripping out the wireless networks or stopping rollouts altogether, as some federal laboratories and agencies have done [News, Feb. 4], IT managers at several organizations interviewed for this story have begun testing devices equipped with new open-standard security systems or deploying proprietary security software. Others have even enlisted their own IT staffs to try to sniff the wireless networks and find potential entry points.

These organizations range from manufacturers to hospitals to a university to a package shipper to a resort. Although they aren't trading data as sensitive as national security secrets, they all regard their wireless networks as needing high levels of security to keep their operations running smoothly and to protect patient records, credit card numbers or company information.

"Every time there is another wireless security story, everybody here gets a little uneasy" about using 802.11b, says Murshid Khan, director of telecommunications and IT operations at Walt Disney Parks & Resorts in Lake Buena Vista, Fla.

Disney has been running wireless LANs for more than a year and has had as many as 150 wireless access points installed, mostly to enable point-of-sale functions where credit card authorization is needed for sales of food and goods.

Some users are deploying wireless LANs, but they're adding on security. By Matt Hamblen

IT ROLLS OUT WIRELESS LANs Despite Insecurity

After using 128-bit encryption on a Wi-Fi network last year, Disney upgraded in January to dynamic encryption, which can use key lengths of 128, 192 or 256 bits, over a virtual private network (VPN). Disney employees randomly try to sniff the network, and a third party has been hired to see if the network can be hacked. "That [dynamic 128-bit] key has not been broken yet," says Khan.

"There are always worries with any wireless network," he notes, but despite that, Wi-Fi "gives us business advantages and is a convenience for customers, who can go anywhere and use a credit card."

Analyst John Pescatore at Gartner Inc. in Stamford, Conn., says concern over Wi-Fi security within enterprises seems to have peaked late last year, after security experts at several universities reported problems with Wired Equivalent Privacy (WEP) and when companies jumped to heightened alert following the Sept. 11 attacks.

"Last fall, companies set out to think things through again," Pescatore says. But somewhat surprisingly, Wi-Fi is still being deployed to avoid installing more wires in a LAN and to give workers greater mobility and flexibility.

"I haven't seen a slowdown in interest by our clients," Pescatore says.

Wireless on the Move

Several years ago, United Parcel Service Inc. in Atlanta embarked on a massive project to put 200,000 terminals on Bluetooth and Wi-Fi networks. Last year's Wi-Fi security worries have slowed deployment in UPS's corporate offices, where data is considered sensitive, but not for warehouse or sorting operations, says David Salzman, program manager. "The data on our mission-critical WLANs isn't sensitive enough to warrant a major [security] concern, compared to the benefits," he says.

Auto manufacturers have long used wireless networks in various settings, including on the factory floor. The auto makers started installing wireless links in the mid-1990s, using proprietary methods until the 802.11b standard was unveiled.

General Motors Corp. has deployed wireless links around the world. Using wires for the same networks would have left important assembly lines vulnerable to hours of downtime, says Arvind Sabharwal, director of telecommunications and networks. In addition, the wireless networks give workers greater mobility.

Despite the contained nature of plants, whose perimeter fences and locked entry areas might seem to make them immune to sniffing by nearby hackers, GM "doesn't consider the lines a low-security area," partly because the WLANs run in proximity to some office networks, he says.

To address what Sabharwal calls the Achilles' heel of WLANs, GM has resorted to a range of approaches, including turning on WEP for access devices that normally default to Off, and testing newer security methods, including WEP2 and 802.11i, which might not roll out in products widely until early 2003, according to analysts.

GM also segments its networks with firewalls and VPNs and relies heavily on detailed site surveys that look at all radio interference sources, including cordless phones. "Even with security software, you can survey the blend of [radio] signals outside the facility to make sure it's minimized," Sabharwal says.

GM's biggest strategic weapon may be its involvement with standards bodies and vendors to see that standardized security methods are quickly incorporated into wireless gear — an important consideration for a global manufacturer that uses Wi-Fi equipment from several makers. "Because of our size and clout, we are making sure some of our partners and vendors are adopting standards quicker in the security area," Sabharwal says.

BMW AG in Munich, Germany, also uses 802.11b on the factory floor and has relied heavily on site surveys to prevent access points from bleeding to nearby buildings or parking areas, says Daniel Lange, director of IT strategy.

Lange says that since the first of the year, BMW has discovered no additional security holes in 802.11b, although there have been more articles describing its deficiencies, in addition to a broader discussion of its flaws. Lange says he hopes the Institute of Electrical and Electronic Engineers Inc.'s recently approved standards will be quickly certified and widely deployed.

BMW does a lot to keep security high, including sending an IT inspector into the homes of BMW workers to see how they use home-based wireless LANs for work, a key point of vulnerability, according to analysts. Lange agrees with analysts and vendors that using a VPN on a Wi-Fi network is sufficient to keep a third party from stealing wireless communications. But he sees other related security problems.

When Lange was asked at a forum last November if BMW has been hacked over 802.11b, he responded, "Not that we're aware of." But, he quickly added, there's a far greater security vulnerability if "a beautiful young woman enters a young man in IT to divulge a network password."

And Lange says he's just as worried about a saboteur somehow entering a BMW plant and throwing a small $50 radio-jamming device under a cabinet, rendering the wireless access points on the 2.4-GHz network useless. It might take hours of downtime to find such a device, he says.

Hospitals could face large security risks with WLANs, analysts say, because they receive frequent visitors and contain sensitive patient data. North Shore-Long Island Jewish Health System in Great Neck, N.Y., which has 18 hospitals, is about to implement a Wi-Fi system in its Manhasset hospital.

"The publicity about Wi-Fi problems has certainly made us more skeptical about how we do our implementation," says North Shore CIO Patrick Carney. "We haven't stopped, but we're more skeptical."

By summer, the Manhasset hospital hopes to have implemented an order entry system that will allow a doctor to prescribe drugs through a laptop that's wirelessly connected to a server. Hospital officials expect that the benefits of the system, which will check and verify with the doctor the proper use and dosage of medications, will outweigh wireless security concerns.

Carney says his most immediate worry is that a hacker could find out when celebrities are checked in at the hospital for drug rehabilitation or plastic surgery. But whatever gear the hospital chooses, he expects it to involve data encryption. "We're more sensitive because Wi-Fi has been too easy to penetrate," he says.

Tampa General Hospital in Tampa, Fla., has a wireless connection between the hospital and its radiology clinics across Tampa Bay. The link was the least expensive of several alternatives and has been great for physicians, who get quick connections to vital patient data, says Joe Gandioci, manager of network services.

That link is secured with Wireless Link Layer Security and Triple Data Encryption Standard technology from Fortress Technologies Inc. in Oldsmar, Fla.

Lessons Learned in School

Many universities are enthusiastically turning to Wi-Fi, including Buena Vista University (BVU) in Storm Lake, Iowa, where 145 Wi-Fi access points are installed across the 1,400-student campus.

The rollout in mid-2000 was originally secured with 40-bit WEP encryption, but security has been enhanced with WEP-plus technology provided by Avaya Inc. in Basking Ridge, N.J., said Ken Clipperton, managing director of information systems.

To lessen the chances of student hackers changing their grades or reducing their tuition bills, BVU has kept its registrar and business offices on the wired Ethernet LAN. BVU will eventually upgrade to more secure protocols such as 802.11e but so far hasn't installed firewalls behind the wireless access points as some analysts recommend.

"We have, in general, the sense of security here," Clipperton says, noting that the wireless network cost less than $400,000, about one-third of the cost of wiring classrooms and other buildings.

Boingo Wireless Inc. in Santa Monica, Calif., boasts that it has 500 "hot-spot" Wi-Fi WLANs ready to serve the public in hotels and airports nationwide. Users can download free Boingo sniffer software that lets them find Wi-Fi networks. The cost is up to $75 per month for unlimited service. An additional $30 provides a personal VPN for users.

Although the company can't be sure if concerns over Wi-Fi security have cut into sales of its service, Boingo decided to provide the personal VPN if a customer's company doesn't have one, because "we knew customers needed a solution to overcome the widely publicized shortcomings of Wi-Fi," says Christian Gunning, director of product management. ◆

TECHNOLOGYQUICKSTUDY
HOT TRENDS & TECHNOLOGIES IN BRIEF

Wireless LANs

BY BOB BREWIN

CONNECTING a computer to a wireless network has never been easier, and the most common standard for wireless networking, the Institute of Electrical and Electronics Engineers Inc.'s 802.11b, offers 11M bit/sec. connectivity — a data rate equal to that of wired Ethernet LANs.

A range of products that comply with Wi-Fi, which is what the 140-member Wireless Ethernet Compatibility Alliance in Mountain View, Calif., calls 802.11b, are now readily available.

You can create a wireless network with just two computers, each equipped with a Wi-Fi card, in what's called an ad hoc configuration. For more computers, you'll likely need to get a wireless access point — a radio receiver/transmitter and antenna that hooks up to a wired network, router or hub. This is called an infrastructure configuration. Access points are available in many different forms, some combined with cable or Digital Subscriber Line modems, routers and firewalls.

Wi-Fi is rapidly becoming a standard feature in new notebook computers. Wireless Internet connections are available in a number of public spaces, including airports, hotels and coffee shops. Competition has driven down the cost of wireless LAN (WLAN) gear: an access point and one PC card can cost less than $300.

Access points can be inexpensive makeovers in office settings. They can be mounted outdoors or poles, masts or existing towers in weatherized shelters. Device antennas are either built into cases or, if they use a card, sport a knobby antenna up to 1 in. long

DEFINITION

[**Wireless local-area networks (WLAN)** use radio waves instead of a cable to connect a user device, such as a laptop computer, to a LAN. They provide Ethernet connections over the air and operate under the 802.11 family of specifications developed by the Institute of Electrical and Electronics Engineers Inc.]

sticking out from the card. WLANs support raw data throughput of 2M to 54M bit/sec. They have a range of several hundred feet, although some systems can cover a mile radius outdoors with tower-mounted antennas.

A WLAN's range can be extended by adding access points, with users roaming among them as they do in a cellular system. Air France Groupe has installed 160 outdoor access points at its Charles de Gaulle International Airport hub in Paris to support bag-matching operations.

Price drops in WLAN hardware, plus the labor costs of installing wired LAN cabling, have made the costs of wired and wireless LANs roughly comparable. WLANs win the race against their wired cousins on convenience — add an access point to a network, and you can serve a whole

new area of a building and multiple users in a few hours.

The proliferation of WLANs has also led to the development of an "always-connected" culture, in which a growing number of users expect to be able to access information wherever they're in an office.

The unwired conference room has been replaced with the WLAN conference room or auditorium with some unsettling results: If you're making a presentation, it had better be good, or you might see bored learners checking their e-mail.

Frequency Hopper

WLANs operate in portions of the frequency spectrum allotted by the Federal Communications Commission for unlicensed use. Anyone can operate a wide variety of devices in those bands without spending billions of dollars for a federal license.

The lack of federal regulation means that as the unlicensed bands get more crowded, the possibility of interference from nearby systems increases.

Any example microwave ovens operate in a 2.4-Hz frequency band used today by Wi-Fi LANs. Users need to ensure that they stand a chance of having their data stream knocked out if someone makes popcorn in the of-

fice microwave.

The FCC first opened the spectrum to unlicensed use in 1985 with a rule allowing "intentional radiators" such as LANs to operate in industrial, scientific and medical (ISM) bands. These bands are used by devices such as medical diathermy equipment or ultrasonic jewelry cleaners, which spray noise around those frequencies as they operate.

The ISM bands include three frequency ranges (see chart), and by the late 1980s, a number of vendors had developed proprietary WLAN systems operating in the 2.4- to 2.4835-GHz range to support vertical applications, such as wireless bar-code scanners used in warehouse or retail applications.

The first WLAN standard for the 2.4-GHz band, IEEE 802.11, used spread-spectrum radio techniques originally developed and patented in 1942 by movie star Hedy Lamarr and composer George Antheil. The first 802.11 standard allowed vendors to use either Frequency Hopping Spread Spectrum (FHSS) or Direct Sequence Spread Spectrum (DSSS).

FHSS "hops" among the 79 1-MHz-wide channels of the 2.4-GHz band, while DSSS spreads its signals across the band, with three 22-MHz-wide DSSS channels available.

Though vendors of FHSS, such as Altvation Ltd. in Tel Aviv and Symbol Technologies Inc. in Holtsville, N.Y., tout it as being harder to hack than DSSS because of the hopping nature about of the 802.11a spectrum now relies on the DSSS technique in the 802.11b standard.

Wireless Networking Spectrum

The FCC allows unlicensed and unregulated operation of a wide variety of communications devices in two spectrum bands. One of those bands, the Unlicensed National Information Infrastructure (U-NII), offers more than twice the spectrum (300 MHz) than the agency sold at auction for the cellular communications bands used by companies such as Sprint PCS Group.

BAND NAME	APPROVED BY FCC	FREQUENCY	APPLICATIONS
	1985	902-928 MHz	Fixed wireless systems used by ISPs and for intra-building connectivity, cordless phones and in-house transmitters for stereo, computer and TV audio
		2.4-2.4835 GHz	Fixed wireless systems, WLANs, microwaves and cordless phones
		5.725-5.850 GHz	Fixed wireless systems and WLANs
	1997	5.15-5.35 GHz	WLANs
		5.725-5.825 GHz (partially requires ISM band)	WLANs

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Wi-Fi is rapidly becoming a standard feature in new notebook computers. Wireless Internet connections are available in a number of public spaces, including airports, hotels and coffee shops. Competition has driven down the cost of wireless LAN (WLAN) gear: an access point and one PC card can cost less than $800.

Access points can be mounted indoors on office ceilings. They can be mounted outdoors on poles, masts or existing towers in weatherized shelters. Device antennas are either built into cases or, if they use a card, sport a knob-by antenna up to 1 in. long

sticking out from the card. WLANs support raw data throughput of 2M to 54M bit/sec. They have a range of several hundred feet, although some systems can cover a mile radius outdoors with tower-mounted antennas.

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Bluetooth Adds Bite To I/O Connections

OUTLOOK: The wireless I/O personal-area network technology could ease some desktop support headaches, but its acceptance into the IT infrastructure is likely to be slow. BY RUSSELL KAY

THE TYPICAL desktop computer may have a dozen or more cables on the back. Perhaps half of all computer hardware problems are caused by these cable connections, which may include power, a mouse, a keyboard, a monitor, a network, a printer, a serial personal digital assistant cradle, Universal Serial Bus devices, a modem, speakers and perhaps a SCSI peripheral such as a scanner. If IT could get rid of those cables, technical support costs might drop considerably.

One way out of this situation may be through Bluetooth, a wireless technology that can tie together PCs and I/O devices to establish what's called a personal-area network. Named after an 11th century Danish king, Bluetooth uses a frequency-hopping protocol that automatically finds and identifies other Bluetooth devices within range [Quick-Study, June 12, 2000]. After having been in development for some five years, Bluetooth is just now becoming commercially available, built into products and sold as add-on cards and adapters.

Bluetooth can do more than replace cables on the desktop. It offers the promise of simpler printing, synchronization and integration with handheld devices. Printing from your

phone, for example, isn't something most users have thought about going before.

What sets Bluetooth apart from other wireless technologies, such as those in the 802.11x wireless Ethernet (Wi-Fi) family, is its range of less than 10 meters, its low power consumption and its cost.

Today, Bluetooth-enabled devices sell at a premium. Manufacturers say they will eventually bring the cost of Bluetooth chips down to about $5 each, at which point peripheral vendors are likely to embed the chips in most computer and communications devices. But that's probably several years off, analysts say.

Technical Challenges

There are two clouds on Bluetooth's horizon. One concerns how well it can coexist with Wi-Fi, which suffers from a small, but not fatal, amount of interference between 802.11 and Bluetooth devices.

The second involves security: Bluetooth does support encrypted communications, but the initial development has been skewed toward convenience. This may not be a ma-

jor issue for printer connections, but it will be when communicating with automated teller machines or factory-floor equipment.

Bluetooth's short range doesn't provide enough communications protection. Like Wi-Fi, Bluetooth will need stronger security mechanisms.

"Security is a concern for us," both for Bluetooth and 802.11, says Albert Hui, manager of technical services at Smead Manufacturing Co. in Hastings, Minn. Today, "scanners and handheld devices are not capable of identifying themselves by using [public-key infrastructure] or certification authentication," he says.

Rachna Ahlawat, an analyst at Dataquest Inc. in San Jose, says that while major vendors such as Cisco Systems Inc. are focusing on 802.11b security, most Bluetooth development has been left to smaller companies. Also, she says, the industry is "treating Bluetooth as essentially unencrypted in critical applications, so enterprise IT just doesn't trust Bluetooth."

Ahlawat says that right now, large companies are much more interested in the longer-range, more versatile and more secure 802.11b technology. Bluetooth does make device I/O interconnections less problematic, and it may eventually permeate the enterprise as new equipment includes the interface by default. But deliberate enterprise deployments are unlikely anytime soon.

"Bluetooth is something I might use to talk to my printer," says Ahlawat, "but not for anything else." ▪

■ TECH SPECS

Bluetooth vs. Wi-Fi

	BLUETOOTH	802.11B (WI-FI)
RANGE	Up to 10 meters	Up to 100 meters
MAXIMUM THROUGHPUT	1M bit/sec.	11M bit/sec.
TESTED PERFORMANCE	Not available	107.5 feet at 11M bit/sec.; 225 feet at 2M bit/sec.
PRIMARY APPLICATION	Cable replacement; personal-area networks; handheld device connectivity	Corporate and home IP LANs

SOURCE: ATHEROS COMMUNICATIONS INC., SUNNYVALE, CALIF.

■ THE MARKET

Looking for a Few Good Users

Vendors have introduced very few Bluetooth devices in the past year, and only in the past few months have Bluetooth-enabled products become readily available. Initial releases are selling mainly to advanced end users and mobile workers, but not to enterprise IT departments.

Computerworld contacted several makers of available Bluetooth

gear, and not one could point to an enterprise customer. This pattern is reminiscent of that of the PalmPilot and its progeny: The devices were inexpensive enough for individuals to buy and bring into the enterprise, generally without the blessing or support of IT. But now enterprise IT has a big stake in supporting such handheld devices. Bluetooth may follow a similar path.

Another reason for slow adoption: The fact Bluetooth products to market are quite expensive for what they do, as is usually the case for a newly emergent technology.

Eventually, Bluetooth chips will be cheap enough to be built into computers and peripherals at a price that's competitive with non-Bluetooth hardware. For now, though, each user will need a $150

Bluetooth add-on card or adapter. Then there's the peripheral costs.

Hewlett-Packard Co.'s DeskJet 995 Bluetooth-equipped printer, for example, commands a $100 premium over the $299 nonwireless 990cxe. In contrast, a high-quality printer cable, which Bluetooth replaces, can be had for about $20.

– Russell Kay

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Rachna Ahlawat, an analyst at Dataquest Inc. in San Jose, says that while major vendors such as Cisco Systems Inc. are focusing on 802.11b security, most Bluetooth development has been left to smaller companies. Also, she says, the industry is "treating Bluetooth as essentially unencrypted in critical applications, so enterprise IT just doesn't trust Bluetooth."

Ahlawat says that right now, large companies are much more interested in the longer-range, more versatile and more secure 802.11b technology. Bluetooth does make device I/O interconnections less problematic, and it may eventually permeate the enterprise as new equipment includes the interface by default. But deliberate enterprise deployments are unlikely anytime soon.

"Bluetooth is something I might use to talk to my printer," says Ahlawat, "but not for anything else." 9

▣ TECH SPECS

Bluetooth vs. Wi-Fi

	BLUETOOTH	WI-FI
Range	Up to 10 meters	Up to 100 meters
Frequency	2.4GHz	2.4GHz
Top bit/sec.	1Mbit/sec.	11Mbit/sec.
Cost	Not available	107.25 feet at 11Mbit/sec.; 225 feet at 2Mbit/sec.
Typical use	Cable replacement; personal-area networks; handheld device connectivity	Corporate and home IP LANs

SOURCE: ATHEROS COMMUNICATIONS INC. SUNNYVALE, CALIF.

▣ THE MARKET

Looking for a Few Good Users

Vendors have introduced very few Bluetooth devices in the past year, and only in the past few months have Bluetooth-enabled products become readily available. Initial releases are selling mainly to advanced and users and mobile workers, but not to enterprise IT departments.

Computerworld contacted several makers of available Bluetooth

gear, and not one could point to an enterprise customer. This pattern is reminiscent of that of the PalmPilot and its progeny. The devices were inexpensive enough for individuals to buy and bring into the enterprise, generally without the blessing or support of IT. But now enterprise IT has a big stake in supporting such handheld devices. Bluetooth may follow a similar path.

Another reason for slow adoption: The first Bluetooth products to market are quite expensive for what they do, as is usually the case for a newly emergent technology.

Eventually, Bluetooth should be cheap enough to be built into computers and peripherals at a price that's competitive with non-Bluetooth hardware. For now, though, each user will need a $150

Bluetooth add-on card or adapter. Then there's the peripheral costs.

Hewlett-Packard Co.'s DeskJet 995 Bluetooth-equipped printer, for example, commands a $100 premium over the $298 nonwireless 950cse. In contrast, a high-quality printer cable, which Bluetooth replaces, can be had for about $20.

– Russell Kay

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Management Software Hits Integration Snag

A new tool promises to simplify security device management, but implementation is no small task

BY MATHIAS THURMAN

SECURITY MANAGERS who are responsible for managing corporate firewalls, virtual private network (VPN) gateways, routers and other devices will understand the headaches I'm facing this week.

Prior to my arrival a few months back, my company was primarily a Check Point FireWall-1 shop. However, the company recently decided to switch to PIX firewalls from Cisco Systems Inc.

Personally, I'm a big advocate of the firewall products from Redwood City, Calif.-based Check Point Software Technologies Ltd. There's nothing wrong with Cisco's PIX products, but I've found myself having to climb a steep learning curve while coping with a rule base that's becoming increasingly unmanageable. And I'm trying to find a way to centralize management of security devices so that we don't need a different tool for every device.

4,300 Reasons for Change

There are two methods of administering a PIX firewall. With the command-line interface method, you can manually enter commands from a terminal window or via Telnet or Secure Shell access.

A typical set of commands might look like the following:

```
[illegible command listing]
```

In this case, the rules tell the firewall that on the demilitarized zone (DMZ) interface, it should allow hosts in IP address ranges 192.168.10.33 to 192.168.10.35 to access host 10.38.20.5 and send e-mail via Simple Mail Transfer Protocol (SMTP).

In principle, that's not a hard way to create access lists and manage a firewall. But at my company, the main corporate firewall contains more than 4,000 lines of rules, and the e-business firewall contains more than 5,000. Every time my staff makes a change, we all stand around with our fingers crossed, cringing, hoping that the firewall doesn't crash. I've never seen so many rules on a single firewall.

To cope with this, we turned to the other method of managing a PIX firewall: using tools based on a graphical user interface.

The two most commonly used PIX firewall tools are Cisco Secure Policy Manager (CSPM) and the company's Web-based PIX Device Manager. We chose CSPM. But I discovered that it can be complex to manage, especially if you didn't contribute to its initial configuration.

As if that weren't enough of a headache, we must also manage access control lists on our routers and switches, as well as the rules for our VPN gateways. Each product type requires a different tool to administer its configuration—even when products come from the same vendor. And if we migrate to our company's Linux-based firewalls for some purposes, we'll have to add yet another management tool.

Even if we wanted to manage all these security resources using myriad management tools, we couldn't afford it. With our limited budget, we've been looking for a single tool to manage all our security devices.

We finally settled on Solsoft NP from Mountain View, Calif.-based Solsoft Inc. This centralized tool can manage and audit security access lists across all of our routers, switches, firewalls and VPN gateways.

The Central Issue

Solsoft NP works like this: First, I define all of my network resources as objects. For example, I might define a Linux server running Netfilter, a Cisco PIX 6.1 firewall and a Cisco VPN concentrator. Once I've completed that task — which, by the way, is the most time-consuming part of the process — I start making connections from one object to another.

If I want IP addresses 192.168.10.33 to 192.168.10.35 to be able to use IP address 10.38.20.5 as an e-mail gateway, I use the mouse to select the SMTP service object and drag a line between it and the IP address object, establishing the relationship. Alternatively, I can create what Solsoft calls "metaclasses" to create a group containing a range of IP addresses. Solsoft NP then treats that group as a single object.

The same goes for all other resources: The administrator picks the service and then draws out the relationships. Once I've completed and compiled the rules, Solsoft NP writes the appropriate code for each device. Solsoft NP doesn't support every firewall, router or VPN product on the market, but it does support many popular ones.

If managing with Solsoft NP sounds easy, deploying it in our environment was anything but. There was no simple way to convert our current 4,300 firewall rules into a format that would allow Solsoft NP to manage them. Nor would the product recognize our current rule set. We needed to manually manipulate, massage and consolidate the PIX configuration into a format Solsoft NP could use.

I couldn't find a tool that would help us automate the process of converting our current rule set. Someone with good Perl programming skills probably

could have written a script to do the work, but that would have taken me a week to figure out. So I ended up exporting the PIX firewall rules into an Excel spreadsheet and manually going through the data.

Along the way, I consolidated the old rules into metaclasses. For example, if I saw that 250 of the PIX rules comprised 50 individual networks all configured to communicate with a single IP address on five different ports, I created two metaclasses — one consisting of the 50 networks (src-group) and the other containing the five ports/services (svc-group). This allowed me to easily create a Solsoft NP rule by drawing a line between the objects. Solsoft NP would then generate the appropriate code to allow the net-group to communicate with the single IP address on the five ports/services in the svc-group.

In 10 hours of work, I was able to consolidate our 4,300-line PIX firewall rule base to just 130 lines. We're still waiting on our official licensed copy of the product. Until then, I'm going to continue to use our evaluation copy to consolidate our other firewalls.

Do you have any experience or suggestions regarding centralized security management that might make this process go faster? If so, please share them in the Security Manager's Journal forum. ∎

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Don Trotta, chief technology officer for Citibanking North America, says banking remains a multi-channel business where customers call, click or stop in. "That's the cool thing – the integration of customer experience across all the channels. When we originally came out with our mission to

provide financial services anytime anywhere, many of the things we can do today didn't even exist," he says.

One of the primary challenges faced by financial IT leaders is creating a sense of personality – and brand loyalty – through the various channels by which services are offered. "When a customer uses an ATM, goes to our web site or visits a branch, we want them to come away knowing that Citi is providing that best experience available. We have our own [creative] sessions in which we imagine every step of that customer's experience – we're thinking of technology in an entirely different and more compelling way," Trotta says.

In addition, the barriers are falling that prevented total consumer financial service, creating en entirely new business model for the financial industry that relies on information and data. For instance, Citigroup is parent to Citibanking, as

well as Travelers Insurance and Salomon Smith Barney. According to Trotta, the result is an entirely new business model driven by customer need vs. specific products.

To fulfill this new business model, Trotta and his peers are looking for people who can analyze the framework of the business and customer needs, and then apply technology. "We need people who can create solutions for customers and who have the ability to acquire new technology skills," he says. The career path in the financial industry for IT experts is broad, according to Trotta. "We have e significant number of former IT leaders who now head businesses." The industry has remained stable in terms of employment for IT profession-ele es demand for integration, security, modeling, service and support has continued to develop.

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NEWS

HP/Compaq

make the deal worthwhile in the long term, some users said.

"The merger gives HP enough horsepower at a high level to compete with IBM, which could perhaps end up being a good thing for users," said Steve Willard, plant manager at Sparzes American Color Lab Inc. in Sun Valley, Calif.

Such sentiments came in the wake of HP CEO Carly Fiorina's assertion last week that a "slim but sufficient" majority of HP shareholders had voted for the merger. The results are still preliminary and have to be certified.

But Fiorina's victory claim, made less than an hour after a special shareholders' meeting to vote on the merger, was immediately challenged by Walter Hewlett, an HP board member and a key opponent of the acquisition.

"In a proxy contest this close, where stockholders are changing their votes right up until the closing of the polls, it is simply impossible to determine the outcome at this time. It is now in the hands of the independent inspectors of election, and we look forward to the certified results," Hewlett said in a statement.

Despite the uncertainty, Fiorina last week was proceeding as if the merger had been approved. Shortly after the merger is legally finalized in a few weeks, customers can expect to get full and detailed product road maps and complete details on their account teams, Fiorina said.

Plans are already in place to merge the HP and Compaq Web sites, and customer service representatives of the merged organization will soon be briefed on how to take calls from customers of either company, Fiorina said.

As previously announced, HP will lay off about 15,000 employees worldwide over the next six to nine months. Fiorina said. The layoffs will come from both HP and Compaq.

A team of more than 500 people has been working on the integration for over six months and is prepared to put those plans into motion to ensure a smooth transition, Fiorina said.

Despite such assurances, users can expect a fairly bumpy ride in the near term as HP and Compaq work through the merger, said Dwight Davis, an analyst at Summit Strategies Inc. in Boston.

Stamford, Conn.-based Gartner Inc. has made a similar assessment. "Field service and sales will likely undergo substantial turmoil, as merger-driven reassignments or cost-cutting layoffs cause some of the best employees to leave and some geographic territories to have rougher transitions than others," said Gartner analyst

Paul McGuckin in a report on the deal.

"I find it hard to believe that there will be no impact on service and support," said Bob Palmer, vice president of Lexnox Collections IT at Lexnox Inc., a maker of tableware and giftware in Lawrenceville, N.J.

In the long term, the deal could make HP a much

stronger player in the data center market and give users wider choices for platforms and services, said Dave Krusthamer, MIS manager at Advanced Fibre Communications Inc. in Petaluma, Calif. "Their big challenge is going to be creating one brand," he said.

"It will be interesting to see how they aggressively move forward with integrating their companies, driving out the necessary cost savings and then, most importantly, delivering a better value package to the consumers of this technology," said Steven J. Matheys, CIO at Schneider National Inc. in Green Bay, Wis.

"It is unclear to me at this time what that value will be, but we will keep an eye on it," he added.

Hackers Breach VeriSign 'Parked' Domain Server

Vulnerability suspected in Microsoft IIS

BY JAIKUMAR VIJAYAN

HACKERS last week broke into a server hosting thousands of "parked" domains that had been registered through VeriSign Inc.'s Network Solutions unit.

The compromised server, which was running Microsoft Corp.'s Internet Information Server (IIS) software, was being hosted for VeriSign by Atlanta-based Interland Inc.

Parked domains, which are also known as domain aliases, are domain names that point to an existing domain. For example, computerworld.net could be two parked domains pointing to computerworld.com.

The idea is to ensure that when a user types in any one of the three addresses, it brings him to the main domain, computerworld.com. The goal of having such domains is to prevent companies with similar names from having similar domain addresses.

Because of last week's breach, Web surfers who typed in the addresses of any of the domains on the VeriSign server were directed to a page owned by the hacker, according to an Interland spokeswoman.

The problem was discovered

March 19 and was fixed in less than two hours, she added, refusing to provide any further details.

Such a breach can easily compromise sensitive information, such as address and billing information relating to the main domain, said Russ Cooper, an analyst in Herndon, Va.-based TruSecure Corp. In many cases, such breaches involving Microsoft's IIS servers are relatively easy to guard against, Cooper said.

"I would be surprised to see if this was a sophisticated attack against a hardened IIS server." Cooper said. Instead, the hackers most likely gained access into the Interland-managed VeriSign server by taking advantage of known vulnerabilities in IIS, he said.

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Order From Chaos

THE IT PEOPLE at Georgia Institute of Technology weren't exactly prepared two weeks ago when they discovered that a server in their business office had been hacked. That server contained two years' worth of travel reimbursement data, passwords for the on-campus purchasing system, and employee credit card numbers and personal information — all of which may have been compromised.

There was no contingency plan for an IT security breach like this. They had to scramble.

But the way Georgia Tech's IT people handled it, they might have been working from a textbook checklist of how to get it right.

Step 1: Spot the problem. On Monday, March 11, a webmaster noticed the server's log files had been erased. He sounded the alarm.

Step 2: Plug the hole. That meant immediately limiting access to the server.

Step 3: Figure out just how bad things are. On Monday and Tuesday, Georgia Tech's IT people had no contingency plan for a server break-in, but they knew they had to analyze before they could act. They checked the server's bandwidth usage and spotted a big spike in traffic over the weekend — a 350GB spike. Someone, or a lot of someones, had pulled a huge amount of data off the server, then nuked the logs. This wasn't subtle hacker exploration — this traffic looked like Grand Central Station.

Then the IT team cataloged what was on the server and identified the scope of the potential problem: employee names and personal information, credit card and Social Security numbers, passwords, and images of signatures for as many as 1,000 faculty members and other employees.

Step 3a: Call the cops. Actually, the IT staffers did that as soon as they had something solid to report. And they kept the university administration and the appropriate department heads in the loop as well.

Step 4: Cover the bases. All the university credit cards whose numbers were on the server had to be canceled and replaced.

Step 5: Hold the big meeting. Wednesday afternoon, the IT team laid out what it knew, suspected, hoped and feared at a meeting with administrators and department heads. Their theory: The hackers had used the server as a way to distribute one or more very large files, such as a digitized movie. Their hope: The financial data was untouched. Their fear: What if it wasn't?

The decision that came out of the meeting was to not take any chances. IT and the university's public affairs office went to work drafting a memo that would lay out what happened and what affected employees should do.

Step 6: Tell the people affected. Thursday at about noon — three days after the break-in was discovered — the memo went out as e-mail to everyone whose personal information might have been exposed. It was also posted on a Web site at www.fraud_concern.gatech.edu. The memo is a small masterpiece of direct communication, complete with concise explanations, clear recommendations and even telephone numbers for credit reporting agencies.

Step 7: Follow up. So far, no wave of credit card fraud has been reported by Georgia Tech employees. But Georgia Tech's IT people will keep tracking any problem reports — and keep feeding information to users as it arrives.

Was their response perfect? No. Maybe it would have been quicker with better planning. Maybe they should have notified credit card holders right away and no waited for more information.

But they didn't fall into traps like institutional inertia or an urge to bury the problem and hope for the best. They acted fast, they got a little lucky — and they did OK.

So take a lesson from Georgia Tech. Study that checklist and learn from it. Download that memo to users and crib from it. Remember, just because they weren't really prepared doesn't mean you can't be. And just because they got lucky doesn't mean you will be. ∎

The 5th Wave

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